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Report of the Administrator of the Production and Marketing Administration



1953

UNITED STATES DEPARTMENT OF AGRICULTURE

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REPORT OF THE ADMINISTRATOR OF THE PRODUCTION AND MARKETING ADMINISTRATION 1953

UNITED STATES DEPARTMENT OF AGRICULTURE,
PRODUCTION AND MARKETING ADMINISTRATION,
Washington, D. C., September 15, 1953.

MR. JOHN H. DAVIS,
Assistant Secretary of Agriculture.

DEAR MR. DAVIS: I present herewith the report of the Production and Marketing Administration for the fiscal year ended June 30, 1953.

Sincerely yours,

HOWARD H. GORDON,
Administrator.

THE YEAR IN SUMMARY

Heavy supplies of farm products, some weakening in export demand, and considerable pressure on prices were factors that influenced several major programs of the Production and Marketing Administration during the fiscal year 1953. Plentiful stocks of most foods and fibers turned the spotlight on production adjustment operations and away from measures aimed at increasing agricultural output. The decline in prices received by farmers for their commodities—a decline which continued a trend starting in February 1951—brought sharply expanded price-support activity and, in turn, the need for enlarging the capacity for storing price-support grain. In the field of distribution, programs to stimulate the movement of plentiful foods through normal trade channels were given special attention, and marketing service and regulatory activities were geared to a situation of abundance.

Production

Output of agricultural products in the fiscal year 1953 reached a level 46 percent above the average of the years 1935-39—a level never before equaled in the Nation's history. Rice production was the largest of record, and corn, winter wheat, and soybean crops were next to the largest. At the same time, cattle numbers reached an all-time high; production of turkeys, chickens, and eggs set new records; and the output of milk approached a new peak.

This heavy outpouring of farm commodities made an all-out production goals program for 1953 unnecessary. Accordingly, the program was discontinued except for vegetables and melons, guides for those crops being retained to help avoid the need for surplus-removal operations. Special suggestions, however, were passed along to producers of cotton and flaxseed. In the case of cotton, growers were urged to reduce plantings for 1953 by about 18 percent from 1952.

As for flaxseed, it was suggested that farmers put in 10 to 15 percent less acreage than was seeded in 1952.

A large crop of wheat was in prospect in June 1953 and this current production, plus carryover and imports, brought the total supply to 1,717,000,000 bushels, or 48 percent above the normal supply, as defined in the Agricultural Adjustment Act of 1938, as amended. This supply situation made proclamation of marketing quotas for the 1954 crop a certainty, inasmuch as the law requires quotas, barring existence of a national emergency, whenever the total supply on July 1 exceeds the normal supply by 20 percent. Anticipating the proclamation of quotas and the conduct of a referendum, PMA collected data needed to establish farm wheat-acreage allotments, and prepared information materials for dissemination to wheat producers.

Marketing quotas were approved by tobacco growers for 1953 crops of burley, flue-cured, fire-cured, dark air-cured, Virginia sun-cured, Maryland, and cigar filler and binder tobaccos. Marketing quotas also were in effect for 1953-crop peanuts.

PMA worked closely with the defense agencies responsible for allocating scarce materials. A few local shortages were felt in the case of a small number of items, but there were generally adequate supplies of such production essentials as fertilizer, pesticides, tractors, trucks, farm implements, wire products, food-processing machinery, and containers. Under its delegated authority, PMA continued to allot controlled materials required for agricultural construction, to make recommendations for accelerated tax amortization, and to certify applications for defense loans.

As in the previous year, PMA maintained close liaison with the Selective Service System, the Department of Labor, the Department of Defense, and other agencies whose activities affect the availability of farm workers. Although labor problems arose on many individual farms, shortages of workers did not unduly hamper agricultural production.

In January 1953, administrative responsibility for the agricultural conservation program was transferred from the Commodity Marketing and Adjustment Group, of which PMA was a part, to the Research, Extension, and Land Use Group. However, facilities and field services of PMA continued to be used in carrying out agricultural conservation program operations.

Price Programs

The general level of prices received by farmers advanced to a post-Korea high of 113 percent of parity in February 1951. From that point a decline began which carried into the fiscal year 1953. In July 1952, the beginning of the fiscal year, prices received averaged 103 percent of parity, but by June 1953, the average had decreased to 94 percent of parity.

Price-Support and Storage Activities

Price-support statistics reflect the generally softer price situation. Support was extended on 1952 crops totaling \$2,864,000,000, as compared with only \$1,061,000,000 on 1951 production. Increases in the volume of support extended were especially large in the case of wheat, corn, cotton, cottonseed, wool, and dairy products.

Loans outstanding at the end of the year totaled \$1,137,000,000, as compared with \$364,000,000 on the same date a year earlier. The cost value of commodity inventories on June 30, 1953, was \$2,339,000,000, compared with \$1,073,000,000 a year earlier. The price-support investment of the Commodity Credit Corporation (CCC) at the end of the 12-month period (the dollar total of loans outstanding plus the value of inventories) was \$3,476,000,000, as compared with \$1,437,000,000 at the end of the fiscal year 1952.

Net realized losses charged against the price-support program totaled \$61,146,000, as compared with \$67,352,000 for the fiscal year 1952.

Public Law 585, 82d Congress, approved July 17, 1952, provided that "the level of support of cooperators shall be 90 per centum of the parity price for the 1953 and 1954 crops of any basic agricultural commodity with respect to which producers have not disapproved marketing quotas." The basic commodities are wheat, corn, cotton, tobacco, rice, and peanuts.

Increased production of crops and a heavier volume of price-support activity accentuated storage problems of CCC. In June 1953, CCC started to contract for grain bins to hold approximately 96,000,000 bushels. And earlier in the year, CCC purchased and erected in Texas, Oklahoma, and Virginia peanut-storage structures having a capacity of about 1,700,000 bushels. As an emergency measure, CCC arranged with the Maritime Administration for the use of 29,000,000 bushels of capacity represented by 75 idle cargo ships on the Hudson River in New York and by 50 ships on the James River in Virginia. CCC also encouraged, through loans, the building of on-farm storage structures having an aggregate capacity of 19,000,000 bushels.

International Wheat Agreement

Sales of wheat during the first 11 months of the fourth International Wheat Agreement year (which covered the period August 1, 1952, to July 31, 1953) amounted to 239,109,000 bushels out of a total 12-month quota of 253,128,000 bushels. All these sales, to 41 different importing countries, were made at or near the maximum Agreement price—the equivalent of \$1.80 per bushel for bulk wheat in store at Fort William-Port Arthur, Canada.

Subsidies of \$125,865,000 were paid on 223,704,000 bushels of wheat, or an average of 56 cents per bushel. Some of these payments related to sales made during the third agreement year, others the fourth.

The agreement was revised and renewed for a 3-year period that will end July 31, 1956. A former member, the United Kingdom, did not sign the renewed agreement, but four new members—Jordan, Korea, Yugoslavia, and Vatican City State—became signatories.

Section 32 Operations

As in other recent years, programs were carried out, under section 32, of Public Law 320, 74th Congress, to stimulate disposal of surplus commodities through encouragement of export, increased domestic distribution, and diversion to new markets and uses. Section 32 funds were spent in the fiscal years 1952 and 1953 as follows:

	<i>Fiscal year 1952 (dollars)</i>	<i>Fiscal year 1953 (dollars)</i>
Project obligations:		
Exports.....	16,755,053	11,674,826
Direct distribution.....	35,220,501	56,717,259
Diversion.....	986,080	1,456,350
Administrative expenses.....	3,037,131	3,031,588
Total above projects.....	55,998,765	72,880,023
Allotments and transfers to cooperating agencies.....	254,180	182,597
Total obligations.....	56,252,945	73,062,620
Unobligated balance.....	219,462,823	327,440,515
Total funds available.....	275,715,768	400,503,135

The Agricultural Act of 1948 provides that sums up to and including \$300,000,000 shall remain available for section 32 purposes until spent, but that any excess of that amount remaining unexpended at the end of any fiscal year shall revert to the Treasury. Accordingly, \$27,440,515 of the unobligated balance shown in the foregoing tabulation for the fiscal year 1953 will revert to the Treasury.

Export payments were made on apples, pears, oranges, grapefruit, lemons, dried apples, canned citrus juices, canned citrus sections, dried prunes and raisins, and extracted honey. Commodities purchased for direct distribution included fresh apples, concentrated orange juice, extracted honey, nonfat dried milk, shell eggs, shelled pecans, dry edible beans, and pork. Diversion payments were made on almonds.

Sugar Program

Operations under the Sugar Act of 1948 stabilized sugar prices, wholesale prices of refined sugar varying narrowly between 8.80 and 8.50 cents per pound during the fiscal year. Sugar requirements for the calendar year 1952 were determined to be 7,700,000 short tons, raw value, and, for the calendar year 1953, 7,800,000 tons. Payments made to producers meeting labor, wage, price, and marketing provisions of the Sugar Act totaled a little over \$63,000,000. Sugar tax collections amounted to more than \$82,000,000.

Marketing Agreement and Order Programs

Federal orders for regulating the handling of milk totaled 49, an increase of 4 from the 45 orders in effect on June 30, 1952. The 4 new orders issued during the year covered the Fort Smith, Ark., Sioux Falls, S. Dak., Stark County, Ohio, and central west Texas areas. Twenty-five marketing agreement and order programs covering 20 fruits and vegetables and tree nuts were in effect—the same as a year earlier. The marketing agreement and order program covering shade-grown cigar-leaf (type 62) tobacco, which became effective June 3, 1952, was continued.

Special Distribution Programs

Cooperating with producer and food industry groups, PMA carried on nationwide merchandising programs to focus maximum attention on beef, honey, pears, peaches, and raisins which were in abundant supply. The beef program, which was set in motion rapidly follow-

ing sharp declines in cattle prices, greatly increased sales and consumption of beef. The honey program was so successful that the industry has organized a committee to coordinate plans for continued merchandising efforts. Twenty-five other merchandising programs were conducted on an area or local basis. An average of 19 foods appeared on each monthly Plentiful Foods List issued.

A total of 9,800,000 children participated in the national school lunch program—5 percent more than in the preceding year—a new high record. Participating schools used 2,100,000,000 pounds of food, about 80 percent of which was purchased from local producers, wholesalers, and retailers. The appropriation for the program amounted to \$83,367,000, the same as in the previous year. The \$67,185,000 apportioned to States and Territories, which, under the law must be matched from sources within the States and Territories at a 1.5 to 1 ratio, actually was matched at a rate better than 5 to 1.

About 268,000,000 pounds of food, acquired under price programs or purchased specifically for the national school lunch program, were distributed to schools, charitable institutions, and, through private welfare organizations, to needy groups overseas.

Defense Food Order 2, under which packers are required to reserve specified percentages of their packs for procurement by the Department of Defense, was extended to cover 1953 packs. Allocations and export controls also were used to assure availability of rice for Korea and the Ryukyu Islands, for traditional American export markets, and for domestic consumption. Controls over domestic end-uses and inventory levels of castor oil were suspended, and export controls over castor oil, tung oil, cotton linters, sugar, and inedible molasses were removed.

Seven barter transactions executed under authority of the Commodity Credit Corporation Charter Act involved the exchange of wheat, corn, and tobacco for strategic and other materials produced abroad. The value of the commodities exchanged was \$14,322,000.

Marketing Service and Regulatory Activities

The volume of grading, inspecting, and classing operations carried on was somewhat larger than in the previous year, reflecting to some extent the increase in supplies of farm products and accelerated price-support activity. New standards for grade were issued for several commodities and a number of old standards were revised, a considerable part of this standardization work being done under authority of the Agricultural Marketing Act of 1946.

The collection and dissemination of market information on major agricultural commodities was continued, much of it on a nationwide scale. Three studies were completed and recommendations were made for improving the market news service in the commercially important broiler-producing sections in the Shenandoah Valley of Virginia and West Virginia, and in North Carolina. Information on prices received by Puerto Rican producers for molasses was included for the first time in the weekly molasses market news report. Coverage of livestock auction markets in Florida and Alabama was broadened.

Progress was made in the regulatory field. In Chicago, 21 dealers and weighmasters were indicted in weighing frauds under the Packers and Stockyards Act, and numerous investigations were carried on

at other points for the purpose of bringing about fair play in the marketing of livestock. About half of the 2,411 complaints filed under the Perishable Agricultural Commodities Act were closed through amicable settlements. Continued heavy export and intermarket movement of large grain crops accounted for the inspection of over 4,000,000,000 bushels of grain under the United States Grain Standards Act. About 28 percent more new products and 10 percent more distributor brands than in the previous year were registered under the Federal Insecticide, Fungicide, and Rodenticide Act.

Marketing Research

A heavy schedule of marketing research was completed, most of it under authority of the Agricultural Marketing Act of 1946. As the following examples show, the marketing research projects carried on covered a field extending all the way from the farm to the ultimate consumer.

Tests of different methods of refrigerating fresh produce and meats in trucks and refrigerator cars were continued and will eventually lead to a single report summarizing the results of using ice and salt, dry ice, and mechanical refrigeration. In one of these tests, frozen turkeys were successfully shipped from Modesto, Calif., to Medford, Mass.

A comprehensive study of apple-handling methods in the Pacific Northwest pointed the way to many savings. For example, 80 Washington State apple houses purchased one or more of the portable mechanical lifts developed in the study for high-piled boxed apples, and annual savings from use of the lifts will amount to about \$1,500 per machine.

Research continued on the types and varieties of cotton most suitable for making different textile products. When the projects now scheduled are completed, the cotton industry will have a guide to use in selecting the kind of cotton most suitable for a specific product, and producers a guide in growing the desired varieties.

A study conducted by the National Research Council under contract with PMA showed that, although certain features of the regulations governing milk sanitation relate to milk quality, many details required by some regulations had no proved significance for sanitary milk production.

On the basis of plans developed by PMA, new wholesale produce markets in St. Louis and Hartford were completed and occupied, and marketing facilities in nine other cities were in varying stages of construction. Studies were made to develop plans for improved facilities in 13 other localities.

A poll of retail customers of several wholesalers showed that wholesalers need to tailor their retailer assistance programs to the needs of varying types of retail operation. Among other findings, the survey disclosed that retailers are anxious to cooperate with wholesalers in reducing delivery costs.

Research shows that for many industrial users the advantages of using liquid sugar outweigh the disadvantages. It is estimated that the potential outlet for liquid sugar is over twice as large as the present market, which is about 21 percent of total usage.

(The following 10 sections cover PMA activities as they relate to specific commodities.)

COTTON AND COTTONSEED

The 1952 cotton crop was 14,952,000 running bales, or about 120,000 bales less than the 1951 crop. This crop, plus a carryover of approximately 2,745,000 bales and imports of about 200,000 bales, provided a supply for the 1952-53 marketing year of about 17,900,000 bales. It was estimated at the end of June 1953 that total disappearance of cotton during the 1952-53 season (domestic consumption plus exports) would be a little under 12,750,000 bales, although domestic consumption was expected to total about 9,500,000 bales—a slight increase over 1951-52 consumption. Exports declined rather sharply and were not expected to exceed 3,250,000 bales.

Prices for Middling $1\frac{5}{16}$ -inch cotton in the 10 designated spot markets averaged about 34.63 cents per pound for the period August 1, 1952, through June 30, 1953, as compared with 39.43 cents for the same period last year. Prices received by farmers for cotton ranged from a high of 114 percent of parity in September to a low of 87 percent in January.

Price-Support Operations

Upland Cotton

Loans were made during the 1953 fiscal year on 2,308,000 bales of 1952-crop cotton, at an average loan rate of 30.91 cents per pound for Middling $\frac{7}{8}$ -inch cotton, gross weight, which was 90 percent of the parity price of cotton as of August 1, 1952. The amount placed under loan was 15.4 percent of the 1952 crop of 14,951,000 bales as compared with 7.4 percent of the 1951 crop of 15,072,000 bales. The average price of Middling $1\frac{5}{16}$ -inch cotton in the 10 designated spot markets, by months, ranged from a high of 39.43 in August 1952, to a low of 32.49 in January 1953.

During the year, producers redeemed 763,000 bales of 1951-crop cotton and about 447,000 bales of 1952-crop cotton.

It was announced before the end of the fiscal year that loans would be available to producers on 1953-crop upland cotton at 90 percent of parity as of August 1, 1953, or at 30.80 cents per pound, basis Middling $\frac{7}{8}$ -inch cotton, whichever is higher. Announcement was also made that loans on 1952-crop cotton, which have a maturity date of July 31, 1953, would be carried in a past-due status through July 31, 1954, thus allowing producers an additional 12 months in which to redeem their loans.

Sales of upland cotton from inventories of CCC totaled 1,465 bales.

At the close of the fiscal year, CCC had in inventory 1,548 bales of owned cotton from the 1948, 1949, and 1950 crops and 234,526 bales of pooled cotton from the 1951 crop. About 1,861,000 bales of cotton were under loan from the 1952 crop.

Extra Long Staple Cotton

An announcement was made that the minimum level of price support for 1953-crop extra long staple cotton (American Egyptian, Sea Island, and Sealand) would be 73.92 cents per pound, net weight, (2.40 times the level of support for upland cotton) with a minimum level for American Egyptian cotton of 74.52 cents per pound and for Sealand and Sea Island cotton of 56.22 cents per pound. It was also announced that if 2.40 times 90 percent of the August 1, 1953, parity

price exceeds 73.92 cents per pound, the levels of price support for the extra long staple cotton would be increased by such amount.

Cottonseed

Price support was available to farmers for 1952-crop cottonseed as follows: Farm- and warehouse-storage loans and purchase agreements at \$66.40 per ton, basis grade cottonseed, and, in areas where necessary, direct purchases at the rate of \$62.40 per ton, basis grade cottonseed. However, no direct purchases of cottonseed were made. The price of cottonseed to farmers during the 1952 marketing season stayed above the support level. Under the 1952 program, 17 farm-storage loans were made on 368 tons of cottonseed. All of the loans were repaid.

It was announced that prices of 1953-crop cottonseed would be supported by means of farm-storage loans, and purchases of cottonseed and cottonseed products as follows: Loans would be made at \$54.50 per ton, basis grade cottonseed, and purchases from producers would be made at an average price of \$50.50 per ton, basis grade cottonseed, by ginner participants in the program; if ginner participants failed to participate, CCC would purchase direct from producers at such support price; participating ginner participants would be paid \$54.50 per ton, basis grade cottonseed, by oil millers participating in the purchase program and that, if nonparticipation by oil millers made it necessary, CCC would purchase cottonseed direct from participating ginner participants at such guaranteed price to ginner participants; the support rate to producers would reflect approximately 75 percent of the May 15, 1953, parity price of \$72.30 a ton average quality cottonseed.

Stockpiling Operations

Purchases of 1952-crop American Egyptian cotton totaled 93,097 bales, of which 61,955 bales were transferred to the national stockpile and 31,142 bales to the account of the Secretary of Agriculture under authority of the Defense Production Act of 1950, as amended.

Late in the fiscal year, CCC was authorized to sell on a competitive bid basis, approximately 837 tons of 1950-crop select Amsak variety planting seed purchased in 1950 for the national stockpile. Upon the consummation of this sale, approximately 973 tons of Pima 32 seed will remain in the hands of CCC. This quantity, together with seed which will be available to the trade for planting in 1954, is considered ample to assure an adequate production of extra long staple cotton in the event of an emergency.

Purchase of Cotton Linters

Cotton linters tendered by oil millers to CCC totaled 81,896,000 pounds under the 1951 program and 502,112,544 pounds under the 1952 program. Linters sold by CCC under the 1951 and 1952 programs totaled 3,112,200 pounds and 69,913,800 pounds, respectively.

Production Programs

Cotton

PRODUCTION AND MARKETING ACTIVITIES. It was proclaimed on October 6, 1952, that no acreage allotment or marketing quota program would be in effect for the 1953 crop. The balance between

total supply and normal supply made adjustment operations unnecessary.

Sharp decreases in export demand for United States cotton exerted weakening influences on prices. During the first 6 months of the 1952-53 season, less than half as much cotton was exported as a year earlier, and the season's total was expected to be smaller than in 1951-52 by about 2,500,000 bales or 40 percent. With a 1952 crop of about 15,000,000 running bales, approximately the same as the 1951 crop, and with the year's domestic requirements running at about 9,500,000—only slightly above 1951-52—the carryover on August 1, 1953, promised to be about 5,200,000 bales, the largest since the 1949-50 season.

Principally because of smaller exports, there were strong indications early in 1953 that the total supply of cotton for 1953-54 might exceed the normal supply and thus require the proclamation of a national acreage allotment and marketing quota for the 1954 crop. An industrywide conference was called by the Secretary of Agriculture early in February to advise him of possible actions to encourage export movement of United States cotton, to recommend measures for holding 1953 production in balance with anticipated demand, to study other measures designed to stabilize and improve the cotton price situation, and to endeavor to forestall marketing quotas for the 1954 crop. This committee recommended measures for dealing with cotton production and marketing problems. Subsequently, advisory committees on cotton exports and on cotton and cottonseed price-support programs were appointed.

As recommended by the cotton committee, the Secretary on February 19, 1953, appealed to farmers to hold production to 12,000,000 to 12,500,000 bales. Following this request, a program was undertaken by Department agencies, with representatives of the trade and related industries cooperating, to acquaint every cotton grower with the need for bringing production into line with demand and with Department efforts to enlarge foreign outlets for our cotton. In this program every effort was made to furnish farmers with full and timely information on the cotton supply and demand outlook and on the effects of excessive production on future acreage allotments and marketing quotas as well as on probable market prices for cotton. Educational material for use in regional, State, and local meetings and at other levels under this program was prepared by PMA. State, county, and community committeemen cooperated with and assisted other Department agencies in carrying out the program.

Earlier in the fiscal year, a pamphlet summarizing the current supply situation and the cotton price-support program was issued. This pamphlet, entitled "Cotton Supplies and Price Support, 1952" was distributed to State, county, and local committeemen and other leaders for use in explaining the price-support program and the prospective increase in end-of-season stocks of cotton.

PRELIMINARY WORK ON CONTROLS FOR 1954 CROP. Preliminary work preparing for possible allotment and quota programs on the 1954 crop was inaugurated in April 1953. This included preparation of State and county office instructions for collecting and compiling data on individual farm acreage and production during the required base period and holding regional meetings. It also included preliminary

work in connection with the measurement of 1953 cotton acreage for individual farms.

Kenaf

Kenaf fiber, a substitute for jute fiber, currently is being acquired under a program begun in 1951 and continued into 1952. The purpose of this program is to place the United States in a position to expand the production of kenaf fiber to meet civilian and military needs should it become necessary. The 1952 program provided for the purchase of 15,000,000 pounds of fiber from Western Hemisphere producers who contracted to grow and deliver specified quantities. Some of the contractors had early reverses and failed to produce a crop. Other contractors delivered some high quality fiber but encountered difficulties which made it impossible for them to deliver the maximum quantities specified in their contracts. It is expected that not more than 1,500,000 pounds of fiber will be delivered by contractors from the 1952 crop. By the end of the year, a total of 693,616 pounds had been purchased and of this quantity 156,296 pounds had been sold to domestic manufacturers.

Defense Activities

A total of 58 applications for tax amortization (necessity certificates) covering the construction of facilities necessary for processing and warehousing the 1952 cotton crop were investigated and recommendations submitted. Analyses of these applications required extensive surveys in California, Arizona, New Mexico, and certain areas of Texas to determine the adequacy of existing facilities and the need for expansion. A number of applications for loans under section 302 of the Defense Production Act of 1950 also were reviewed.

Other defense production activities included the development of periodic supplies and requirements data for upland cotton, cotton linters, cotton waste, extra long staple cotton, kenaf, abaca, sisal, and other vegetable fibers. PMA representatives also participated in activities of the Interdepartmental Fibers and Textiles Committees and attended Department meetings on procurement and allocation of materials and facilities.

Market News

Weekly cotton market news reports and periodic reports on the quality of ginnings were issued from the central market news office in Memphis and area offices in Memphis, Atlanta, Dallas, and Bakersfield. Weekly market news reports designed for the use of farmers were issued on both cotton and cottonseed from Atlanta, Memphis, and Dallas and on cottonseed from Bakersfield during the marketing season. Also issued were daily and weekly reports on cotton quotations in the 10 designated spot markets, a weekly cotton linters review, monthly and annual reports on cotton price statistics and on mill margins, a quality report on cotton in the carryover as of August 1, 1951, a report showing estimated percentages of cotton acreage planted to different varieties, and annual bulletins on the quality of cotton and cottonseed in the 1951-52 crop.

The mailing list for the various reports totaled 60,240 names and approximately 1,977,807 copies of reports were issued to producers, merchants, mills, and other groups.

The report issued on the prices of cotton cloth and raw cotton and mill margins was revised as a result of major changes that have taken place in the composition of the cotton crop during the last 20 years and significant shifts in the qualities of cotton consumed by mills as well as changes in kinds of cloth produced. The Atlanta area office is now publishing cotton quotations from the Charlotte, N. C., market on a year-round basis. The Memphis office began furnishing spot cotton prices in the Memphis market to the Associated Press and to local radio and television stations. The Dallas office furnished cotton prices for Dallas, Houston, and Galveston to the United Press, Dallas prices to a local newspaper, and closing prices for Lubbock and Fresno to the Dallas Cotton Exchange.

Classing and Grading

Twenty-nine permanent and two seasonal cotton classing offices were operated during the year. Plans were under way toward the close of the year to open a permanent office at Carlsbad, N. Mex., and a seasonal office at El Centro, Calif., and to close the seasonal office at Artesia, N. Mex.

Employees of the Department of Agriculture classified 11,160,981 sample of cotton (table 1). Of this quantity 9,382,240 samples, or about 63 percent of total United States ginnings, were classed for the 515,711 farmer members of cotton improvement groups organized under the Smith-Doxey Act. An additional 1,116,931 samples were classified by classers licensed under the Cotton Standards Act.

The Board of Cotton Linters Examiners issued Form A memoranda on 4,588 samples and classed 5,200 samples for cooperating mills and the nineteenth annual grade survey. The Board handled approximately 50,000 supervisory samples received from licensed linters classifiers, representing about 950,000 bales of linters.

Licensed cottonseed chemists issued a total of 148,058 cottonseed grade certificates.

Licenses were issued to 254 cotton classers, 144 linters classers, 29 cottonseed chemists, and 505 cottonseed samplers.

TABLE 1.—*Volume of cotton classed (not including samples classed for supervision purposes), fiscal year 1953*

Cotton classing under or for—	Samples	Cotton classing under or for—	Samples
Smith-Doxey Act (act of Apr. 13, 1937) ¹ -----	Number 9, 382, 240	Federal Penitentiary, At- lanta, Ga-----	Number 26, 019
Cotton Futures Act-----	650, 668	Total classed by employees of Cotton Branch, PMA-----	11, 160, 981
Cotton Standards Act, public classing service, and miscellaneous ² -----	386, 588		
Cotton Statistics and Esti- mates Act-----	354, 100	Reported classed by li- censed classers under Cotton Standards Act---	1, 116, 931
Commodity Credit Cor- poration-----	216, 459		
Mutual Security Adminis- tration-----	144, 907		

¹ Classification under this act is acceptable as a basis for Commodity Credit Corporation loans.

² Includes accommodation classing for governmental agencies and others.

Standardization and Testing Activities (Including Research)

Revised official standards for grade of American upland cotton were promulgated August 12, 1952, to become effective August 15, 1953. The revised standards consist of 6 standards in physical form and 1 descriptive standard for white cotton, 5 descriptive standards for spotted cotton, 4 standards in physical form and 1 descriptive standard for tinged cotton, 3 descriptive standards for yellow stained cotton, and 4 descriptive standards for gray cotton. The descriptive standards for extra white cotton and the standards for the Middling Fair and Strict Good Middling white grades were eliminated in the revision. The new standards, whiter in color and less artificial in appearance, are more like natural raw cotton than the expiring ones.

The tenth Universal Cotton Standards Conference held in Washington in May examined and approved 1,169 key boxes of the revised standards for use during the next 3 years. The conference was attended by about 25 delegates and observers from trade organizations in foreign cotton-consuming countries and by about 60 representatives from organizations in the United States, comprising the principal producing, merchandising, and consuming phases of the industry. All major groups represented at the conference recommended that the Good Middling (white) standard be changed from descriptive to physical form and that a field trial be given proposed physical form standards for spotted cotton. The Department later announced its intention to carry out both recommendations.

A total of 3,936 copies of cotton standards for grade and 9,543 copies of cotton standards for staple length were distributed. For linters, 260 copies of standards for grade and 72 expositor types for staple and character were distributed.

The cottonseed grading system was amended to provide for the inclusion of linters, on an optional basis, as a factor in the grading of cottonseed.

Research and technical assistance in connection with the official cotton standards are continuing activities. All material for use in the 1952 revision of the grade standards was selected on the basis of laboratory measurements of color and foreign material content.

A new color diagram for use with the automatic colorimeter was developed on the basis of data from surveys of recent cotton crops and to conform to the 1952 revision of the grade standards. Annual observations were made and recorded in connection with a study of the stability of the color in cotton during storage as related to the grade standards. Two reports on color studies were published. One, entitled "Color Measurements of Cotton, Second Report on Application of Nickerson-Hunter Cotton Colorimeter," was published by PMA; the other, "Colorimetric Specifications of Munsell Repaints," by the Journal of the Optical Society of America (vol. 43, March 1953).

All cottons used in the official standards for staple length were selected on the basis of fiber laboratory tests.

Further experiments were made in an effort to improve the artificial daylighting system being used for cotton classification. This work included tests of a new simplified fluorescent tube and improved types of diffusing glass.

Statistical studies were continued of the relationships of fiber properties and other factors of quality in raw cotton to performance in

processing and to product quality. Results of these studies were published under the following titles: "Relation of Rate of Carding and Factors of Cotton Quality to Strength and Appearance of Combed Yarn, Neps in Card Web, Card Waste, and Comber Waste," and "An Evaluation of the Significance and Use of the K Factor of Yarn Strength and Its Relation to Raw-Cotton Quality."

Research designed to effect improvements in the present official system of grading cottonseed was continued. Work was completed on the development of a cleaner-mixer for the simultaneous extraction of foreign material in cottonseed samples, as a basis for the determination of foreign material content, and the compositing of the samples for measurement of various other factors of quality.

Equipment previously developed for the determination of the linters content of cottonseed was redesigned to improve its capacity and accuracy. A standard procedure for the use of this equipment was developed.

Further improvements were made in electronic equipment for the rapid determination of the moisture content of samples of cottonseed.

A report on the results of a study of the quality of cottonseed produced in the irrigated areas of the Far West was published under the title, "Cottonseed Quality in the Far West." Cottonseed was not graded in this area prior to this study but the results of the study stimulated an interest in the routine grading of the 1952 crop.

A study of the standardization and grading of cotton linters has indicated the need for a revision of the present standards in order to improve their usefulness in the marketing and utilization of this commodity. This study will be continued in an effort to develop linters standards which will include all important factors of quality.

A new technique for making tests of fineness and maturity of cotton samples has been designated "The Causticaire method," because it involves the treatment of test specimens with sodium hydroxide (caustic soda) and the differential measurement of air permeability of treated and untreated specimens by means of a Micronaire instrument. Statistical studies of results obtained by the Causticaire method indicate that such results have materially higher significance in relation to the processing performance of cotton than results obtained by means of previous standard methods for conducting tests of fineness and maturity of cotton fibers. Furthermore, this method can be performed very much more expeditiously and accurately than the former standard test for maturity. Progress has been made in developing an improved scale for use with the Micronaire instrument and in the development of accessory equipment for the caustic treatment of the test specimens. Reports on this work have been published as follows: "Causticaire Method for the Determination of Cotton Fiber Maturity and Fineness," and "An Evaluation of Various Ratios for Classification of Cotton Fibers for Maturity."

Equipment accessory to the mechanical cotton fiber blender developed last year has been designed for producing a specimen of blended fibers suitable for nep determinations on cotton samples. A pilot model of this equipment was constructed and subjected to preliminary testing. It appears that this equipment will make possible an evaluation of the nep factor of cotton quality and eliminate the processing of samples through textile machinery, as has been the standard practice to date.

A study of the effect of atmospheric conditions on results of carded yarn spinning tests was completed. On the basis of this study, revisions have been made in standard atmospheric conditions for spinning tests in order to facilitate conditioning of material for yarn testing and to minimize variability in test results. The study will be continued to include combed yarn spinning tests.

A study, initiated to ascertain the scale of testing required for dependable results in the evaluation of different cottons from the standpoint of various factors of spinning performance, will be completed during the next fiscal year.

Standard procedures for conducting cotton fiber and spinning tests were revised to provide greater uniformity and accuracy of test results. An interlaboratory check-testing program was continued as a means of locating and correcting differences in the level of test results as between the various laboratories.

Laboratory facilities have been made available to other Federal and State research agencies on a cooperative basis and to cotton breeders and others on a fee basis, under the provisions of the Cotton Testing Service Act of 1941. The cotton laboratories are located at Clemson, S. C., Stoneville, Miss., College Station, Tex., Mesilla Park, N. Mex., and Washington, D. C.

Fiber and spinning tests made in connection with research programs of cooperating State and other Federal agencies totaled 1,991, a volume approximately twice as large as that of the previous year. A total of 36,577 tests were made on a fee basis. Information on the tests available and the interpretation of test results were revised and published under the title "Cotton Testing Service."

Marketing and Ginning Research

Field testing of equipment for the automatic mechanical sampling of cotton bales during ginning was carried out at three commercial gin installations in different cotton-producing areas, more than 15,000 bales of cotton being sampled with this equipment during the 1952-53 season. The equipment was further improved during the year on the basis of experience obtained in field testing.

A study of 27 of the principal central cotton markets included an evaluation of each from the standpoint of relative suitability for designation for price quotation purposes under the Cotton Futures Act. A report on the results of the study was published in May 1953 under the title "An Appraisal of Certain Central Cotton Markets with Respect to Suitability for Designation for Price Quotations."

Data with respect to costs to cotton growers for ginning and other services incident to the marketing of cotton were assembled on a belt-wide basis for the 1952-53 cotton season. These data were published in a report entitled, "Charges for Ginning Cotton, Costs of Services Incident to Marketing, and Related Information, Season 1952-53."

Fiber and spinning tests were made on samples of early season, mid-season and late-season cotton from 108 cotton-improvement areas throughout the Cotton Belt during the 1952-53 cotton season. Reports on the results of the tests were published at monthly intervals from August through December. A summary report for the entire cotton season was published as "Summary of Fiber and Spinning

Tests for Some Varieties of Cotton Grown by Selected Cotton Improvement Groups, Crop of 1952."

A study was begun in four areas distributed across the Cotton Belt to develop information with respect to the relationship between prices received by farmers for individual lots of cottonseed to the quantity of such lots. The data obtained in connection with this study are being analyzed as a basis for a published report.

Research designed to develop an improved technology for ginning cotton was conducted jointly with the Bureau of Plant Industry, Soils, and Agricultural Engineering. That Bureau has primary responsibility for the mechanical engineering phases of the work, whereas PMA has primary responsibility for the cotton and cottonseed quality and economic phases. The principal items on which work was done during the 1953 fiscal year were as follows:

1. Equipment for controlling the rate at which seed cotton enters the gin in order to assure more efficient operation of gin equipment was further improved by providing automatic control of operation. Practical operating tests of this equipment have indicated the desirability of providing additional capacity in the hopper, from which a uniform rate of feed is obtained, so as to eliminate any overflow in the distribution to gin stands. Although further improvement will be sought, specifications and data sheets relating to the equipment have been made available to ginners and gin equipment manufacturers, some of whom have proceeded with the construction and use of the equipment as developed to date.

2. An improved model of a device for removing sticks and stems from roughly harvested cotton was constructed and tested at the Stoneville, Miss., Ginning Laboratory. This equipment was designed to protect gin equipment from excessive wear and chokages and to improve the quality of ginned lint and seed. Preliminary results indicate that sufficient capacity for normal ginning operations has not yet been attained.

3. A public service patent has been obtained for an improved moting and cleaning device, called a reciproc-cleaner which was developed for use in conventional saw-gin stands. Reciproc-cleaners are being incorporated in new gin stands now being manufactured by some gin equipment firms. A report is being prepared for publication.

4. Research on the optimum moisture content of cotton for each of the processes associated with ginning was continued with primary emphasis on the development of basic data concerning the regain properties of seed cotton. Several methods for restoring moisture to dried cotton prior to ginning were evaluated from the standpoint of relative effectiveness and resulting quality of ginned lint.

Studies of the quality and costs of ginning services being performed by commercial ginning establishments were carried on in central Arizona and in the Rio Grande and Pecos Valleys of New Mexico and Texas. The Arizona study was conducted in cooperation with the agricultural experiment station. The studies in these areas were expanded during the year to include roller-ginning establishments. The saw-ginning phase of the study in New Mexico and Texas was completed and the results were published in a report entitled, "Cotton Ginning Efficiency and Costs in the Rio Grande and Pecos Valleys, Seasons of 1949-50 and 1950-51."

A study of the quality and cost of ginning services performed by commercial ginning establishments in the Piedmont area of Georgia was conducted in cooperation with the Georgia Agricultural Experiment Station. A report of this study will be published as a bulletin of the experiment station.

Assistance has been given to State agricultural experiment station workers in connection with regional studies of marketing cotton and cottonseed.

A preliminary study of market outlets for cotton linters was made and a report was prepared for administrative use.

Agricultural Marketing Act Projects

Studies of market outlets for cotton were continued with primary emphasis on the development of comprehensive information with respect to the qualities of cotton being used for the manufacture of specific products and the total quantities required for each. Studies were completed during the year on eight cotton products. These products represent an aggregate consumption of about 1,700,000 bales of cotton. A report on the results of these studies was published under the title "Market Outlets for Cotton in Some of the Principal Cotton Fabrics—Supplement I (MRR-25)."

A study made by the textile school of Clemson Agricultural College under contract with PMA was completed and the results were published in a report entitled "Comparative Suitability of Selected Varieties of Cotton for Six Textile Fabrics."

Another study, under contract, was started to develop standard procedures for evaluating the bleaching, dyeing, and mercerizing properties of cotton samples.

All field work in connection with a study of the economic aspects of storage of seed cotton at gins was completed. A report on the results of this study is nearing completion.

A cottonseed drier-cleaner, developed at the ginning laboratory for preserving the viability and milling quality of damp seed, was installed at a commercial gin for field testing. The unusually dry weather during the harvesting of the 1952 crop made the use of this equipment unnecessary except to a limited extent. However, the limited quantities of damp seed that were processed through this equipment were materially improved in grade as compared with control lots. Field testing of this equipment will be continued during the next ginning season in order to develop adequate information with respect to its effectiveness and the cost of operation. An application has been filed for a public service patent on the equipment. Work on this project is being conducted jointly with the Bureau of Plant Industry, Soils, and Agricultural Engineering, that agency having responsibility for the mechanical engineering phases of the work, and PMA for the cottonseed quality and economic phases. Information developed in connection with this project was published in the May 9, 1953, issue of the Cotton Gin and Oil Mill Press, under the title, "Effects of Ginning Roughly Harvested Cotton on Foreign Material Content of Cottonseed."

Research was continued on the determination of the relative effectiveness of various combinations of conditioning, cleaning, and ginning equipment for the various types of cotton produced in the irrigated

areas of the Far West and ginned under conditions of abnormally low humidity. Work was continued on the analysis of results of extensive empirical tests of various combinations of gin equipment and methods with a view to publishing the results during the next fiscal year. Preliminary results of these analyses have been discussed informally at meetings of ginner and cotton producers. This work, also was conducted jointly with the Bureau of Plant Industry, Soils, and Agricultural Engineering.

Research and development work on an electronic instrument and accessory equipment for the rapid determination of the oil content of samples of cottonseed was advanced to the point where satisfactory performance was attained in the laboratory. The equipment will now be redesigned to facilitate its manufacture and reduce its cost. Units of the redesigned equipment will be subjected to extensive field testing to assure satisfactory performance under various conditions of commercial operation. This project is being broadened to include work on suitable methods for the evaluation of the quality of cottonseed oil. Part of the work of this project was done under contract with a private research institution.

DAIRY PRODUCTS

Milk production in the fiscal year 1953 amounted to 118,477,000,000 pounds—one of the highest production totals of record. As prices of manufacturing milk weakened under the influence of heavy supplies, Government price-support purchases increased.

Price Support

The dairy price-support program which became effective April 1, 1952, was continued through March 1953. The levels of support under this program were \$3.85 per 100 pounds of manufacturing milk and 69.2 cents per pound of butterfat. These levels were equal to 90 percent of parity as of the beginning of the marketing year.

The support program was extended for the marketing year, April 1953 through March 1954, at 90 percent of parity as of the beginning of the year. The levels of support for 1953-54 are \$3.74 per hundred pounds of manufacturing milk and 67.3 cents per pound of butterfat. These represent declines of about 3 percent from the levels of a year earlier, because of the decline in the parity index. The support program is being carried out through offers to purchase carlots of dairy products at the following prices:

Products:	Price (cents per pound)
Butter, U. S. Grade A or higher:	
Chicago.....	65.75
New York.....	66.50
San Francisco.....	66.75
Seattle.....	66.75
Butter, U. S. Grade B:	
Chicago.....	63.75
New York.....	64.50
San Francisco.....	64.75
Seattle.....	64.75
Cheddar cheese, U. S. Grade A or higher.....	37.00
Nonfat dry milk solids, U. S. Extra Grade:	
Spray.....	16.00
Roller.....	14.00

The purchase price for butter at points other than the 4 designated markets is the price at the designated market named by the seller less 80 percent of the lowest published domestic railroad carlot freight rate per pound gross weight from the offer point to the designated market.

During the early part of the fiscal year, demand for dairy products was relatively firm at prices moderately above support purchase levels. No butter and only limited quantities of cheese and nonfat dry milk solids were purchased under the support program up to late November. As production increased in late 1952, however, market prices weakened, and offerings of butter, cheese, and nonfat dry milk solids continued heavy for the remainder of the fiscal year. Support purchases during the fiscal year totaled 278,000,000 pounds of butter, 177,000,000 pounds of Cheddar cheese, and 399,000,000 pounds of nonfat dry milk solids.

Plans were announced to dispose of substantial quantities of butter, cheese, and nonfat dry milk solids to nonprofit school lunch programs, charitable institutions, the armed services, welfare organizations for needy persons here and abroad, and other outlets which would not interfere with the operation of the support program. Only a small proportion of these dairy products actually was distributed during the year, however. More than 90 percent of the butter and cheese and 80 percent of the nonfat dry milk solids purchased during the year were on hand June 30, 1953.

Dairy industry and congressional leaders were consulted with regard to a price-support program for the marketing year beginning April 1, 1953. These leaders urged the continuation of milk and butterfat price supports at 90 percent of parity for another year to give the industry opportunity to develop alternative solutions. Early in April, over 90 representative producers and distributors of dairy products and of agriculture generally were called together to review overall dairy problems. In May a 20-man group of industry representatives met to consider further the suggestions of the larger group. Their recommendations emphasized the importance of increased industry efforts to increase sales of milk and its products.

Marketing Agreements and Orders

Four new milk marketing areas were brought under Federal regulation, increasing the total number of such areas to 49. The four new orders issued covered the Fort Smith, Ark.; Sioux Falls, S. Dak.; Stark County, Ohio; and central west Texas areas.

Approximately 25 billion pounds of milk were delivered by the 180,000 producers who marketed under Federal milk marketing orders during the year.

A hearing was concluded on a proposed new order for central Mississippi, and order proceedings were pending on a hearing held in January 1952 on a proposed order for the Muskegon, Mich., marketing area. A hearing on a proposed order for Black Hills, S. Dak., was scheduled. Also, inquiries concerning new order programs were received from 16 additional marketing areas.

A total of 46 public hearings were held to receive testimony relative to new orders or amendments to existing orders, and 39 amending orders were issued.

Eleven orders were issued to suspend certain provisions of existing orders.

Nineteen petitions were filed by handlers for review of order provisions under the Agricultural Marketing Agreement Act, and 11 petitions were dismissed or otherwise disposed of during the year. On June 30, 1953, action was pending on 34 petitions.

On July 1, 1952, 15 proceedings to enforce the provisions of orders or for a review of administrative decisions on petitions were pending. Sixteen new actions were instituted during the year. Eighteen were disposed of and 13 were pending as of June 30, 1953.

Among the court decisions rendered were the following:

Kewaskum Dairy Company and William H. Heinemann Creameries v. Erdman, et al. (Milwaukee order); *U. S. v. Crowley's Milk Company, Inc.* (New York order); *Brannan v. Charles Kass, individually trading as Babylon Milk and Cream Company* (New York order); *Babcock Dairy Company, et al. v. Brannan* (Toledo, Ohio, order); and *United Milk Producers of New Jersey v. Brannan*.

The *Kewaskum Dairy* case was an enforcement action to compel payment of obligations although a petition for review of the validity of these obligations was then pending. The court issued a mandatory injunction requiring compliance and recognized that the administrative review proceeding was a legal prerequisite to a consideration of the merits of the case which could come before the court only in an appeal to review the Secretary's decision in the administrative proceeding.

In the *Babylon Milk and Cream* case the Supreme Court denied a petition for certiorari, thus rendering final the decision of the circuit court holding a provision in the New York order invalid. The provision affected involved a requirement of payment at a specified rate per hundredweight into the New York pool whenever milk not priced under the order was disposed of in the marketing area in competition with milk on which order prices had been paid.

In the *Crowley* case, the court considered that a subordinate regulation issued by the market administrator and as interpreted by him was inconsistent with a provision of the order issued by the Secretary when that order was construed in harmony with the court's understanding of the basic law. The result was to change the classification and resulting obligation of the handler with respect to substantial quantities of milk.

In the *General Ice Cream* case, the court held that specific time limits prescribed in an order within which certain claims should be filed was within the authority of the Agricultural Marketing Agreement Act and justified a denial of the claim if not filed within the prescribed time.

In the *Babcock* case a United States district court held that an order provision requiring handlers to pay a bargaining type cooperative for milk received from its members, instead of making payment directly to such members, was without statutory authority. In one more case, *United Milk Producers of New Jersey v. Brannan*, the court dismissed an attempt of this plaintiff to enjoin the Secretary from holding a hearing on a proposed order.

Outstanding among the pending court cases is that of *Oscar L. Grant, et al. v. Brannan*, which attacks the validity of the cooperative payment provision of the New York order. A provision in the Boston order providing for cooperative payments on a different basis was held invalid by the Supreme Court because of the lack of statutory

authority in the case of *Charles F. Brannan v. Delbert O. Stark, et al.* Although this decision of the Supreme Court related to a provision of the Boston order, the Secretary did suspend similar provisions in two other orders in conformity with that decision. In the *Grant* case a restraining order is outstanding, the effect of which is to preserve the rights of all parties in the event of an adverse decision, but at the same time allowing some payments within established limits to be made.

Agricultural Supply Program

PMA helped to develop programs for the procurement of dairy products for export to European countries under financial aid received from the Mutual Security Administration. A total of 125,000 cases of evaporated milk were purchased during the year for shipment to Greece. Other requirements for dairy products from the United States under these programs were filled from price-support stocks rather than direct purchases.

School Lunch and Other Distribution

The Department made available from CCC price-support stocks for distribution to school lunch programs and other eligible outlets under Section 32 approximately 23,200,000 pounds of butter, 1,800,000 pounds of Cheddar cheese, and 12,000,000 pounds of nonfat dry milk solids. In addition, the Department purchased during the year 14,190,000 pounds of processed Cheddar cheese and 8,700,000 pounds of nonfat dry milk solids for school lunch uses.

Market News

(Both dairy and poultry market news services are handled by PMA's Dairy Branch.)

Although no new dairy and poultry market news service offices were established, the service was improved at most existing offices through the addition of new types of market information and by increased coverage.

Most of the dairy and poultry market news field offices are now operated under cooperative agreements with States in which they are located. Agreements with 18 States were in effect during the year. One new agreement was entered into during the year, and another was negotiated to become effective in 1953-54.

Interest in inauguration of new programs or in expanding existing ones was expressed by agencies in New England, Wisconsin, Georgia, and Nebraska. Numerous requests for further refinement of storage reports also were received.

A study of the 35-cities weekly storage report shows that several of the cities in this group have lost their former significance as important storage centers for individual products. However, the study also indicates that substitution of cities which are now more important would apparently add little value to the report from the standpoint of showing trends, and for use as a basis to estimate total United States stocks currently before the monthly reports are available. Furthermore, if a change were made, it would be desirable to build up historical series for each of the several products included.

Research on the adequacy of the poultry market news service in North Carolina and the Shenandoah Valley broiler areas is discussed on page 87.

A research project in Texas, relating to the reporting of broiler prices in the widely scattered producing area of the State, has shown that such reporting can be done successfully.

A Fresno, Calif., research project in reporting prices of turkeys was completed June 30. This project was successful and the State department of agriculture will continue the service and finance it from State funds.

Standardization

Continued demand for Federal inspection and grading of dairy products was manifested by requests for 1,464 copies of Department standards. In addition, more than 200 copies of each of U. S. Sediment Standards for Milk and Milk Products and U. S. Scorched Particle Standards for Dry Milks were sold.

U. S. Standards for Grades of Swiss Cheese, which were promulgated and became effective February 1953, replaced Tentative U. S. Standards for Grades of Swiss Cheese which had been used since 1944.

U. S. Standards for Grades of Nonfat Dry Milk Solids were revised and the revision became effective May 1953.

Studies were made of what should be included in Standards for Grades of Dry Whole Milk, with the view to modifying the present tentative standards that have been in effect since 1943.

A request was received for the development of standards of dry buttermilk solids. Information is being assembled preparatory to issuing standards for this product. A rapid and accurate method of filtering roller process dry buttermilk solids, using a 10-percent solution of tetra sodium salt of ethylene diamine tetra acetic acid powder, was developed and published. This will promote uniformity by making the U. S. Scorched Particle Standards for Dry Milks applicable to this product.

Information is being assembled preparatory to issuing U. S. Standards for Dry Whey Solids.

In cooperation with the Bureau of Dairy Industry, a research project was carried on during the year to determine the degree of suitability of various small packages for the preservation of nonfat dry milk solids. Milk solids packaged in 37 types of packages representing the products of 10 major manufacturers of packaging material were obtained and stored at 85° F. and 85 percent relative humidity. Samples were removed from storage monthly for testing. In addition to moisture absorption, the principal consideration, the study deals with bacterial and coliform estimates, solubility, flavor, and color—all important factors. A preliminary report was prepared in April and discussed with representatives of the companies submitting the packages.

The use of uniform standards in judging dairy products was stressed to student judges at the 1953 Collegiate Students' International Contest in Judging Dairy Products.

The use of uniform standards uniformly applied was further stressed by a cheese judging clinic for team coaches as a part of the program of the American Dairy Science Association.

To promote uniformity on an international basis, and encourage international participation in the contest, a paper entitled "A Tested Basis for International Uniformity in Judging Dairy Products" was prepared and accepted for presentation at the 13th International Dairy Congress, at The Hague, June 22, 1953.

A complete review was made of the research work showing the effect of feeds and other factors on the flavor of milk. This review is being prepared for publication.

Assistance was given in the preparation of proposed Federal specifications for butter, Swiss cheese, ice cream, sherbets, and ices. Assistance also was given in the preparation of military specifications for sweetened dry milk product; pasteurized, homogenized, and frozen milk; pasteurized chocolate milk and chocolate milk drink; cultured dry buttermilk solids; and stabilized sterilized cream. Recommendations were made regarding proposed military specifications for compressed cheese bars, dry malted milk, and sterilized canned whole milk.

Inspection and Grading

During the first 6 months of the fiscal year 1953, inspection and grading activities continued at essentially the same level as for the previous year. Starting January 1, 1953, demand for grading service increased materially and continued at an accelerated rate. The large volume of butter, Cheddar cheese, and nonfat dry milk solids offered under price-support programs was the chief contributing factor to the large increase in volume of products graded. One significant development was the additional service provided several firms in the grading and grade labeling of nonfat dry milk solids packed in consumer type packages. The grading and grade labeling program for creamery butter increased slightly.

The 41 States cooperating under the master memorandum of agreement, which was initiated July 1, 1951, continued operating under the agreement and utilization of State employees as graders increased considerably over the previous year.

The units of dairy products graded during the fiscal year ended June 1953 totaled 1,553,995,000. The units graded for the fiscal year 1953 compared with those graded during the preceding fiscal year show a large increase, primarily because of the large volume of butter, Cheddar cheese, and nonfat dry milk solids offered under the price-support program.

Table 2 shows the volume of products graded for the fiscal years 1952 and 1953.

TABLE 2.—*Comparative inspections and/or gradings of dairy products, fiscal years 1952 and 1953*

Commodity	Unit	Inspections in fiscal year—	
		1952	1953 ¹
Butter-----	Pound---	364, 758, 614	731, 109, 084
Cheese-----	do-----	90, 706, 272	249, 032, 400
Dry milk-----	do-----	239, 834, 281	542, 640, 709
Evaporated milk-----	Case-----	1, 354, 652	199, 042
Miscellaneous (canned fluid whole milk, canned sweet cream, and ice cream mix).	Pound---	9, 704, 465	22, 255, 912

¹ Partially estimated for June.

Activities Under the Agricultural Marketing Act

Studies of Federal regulation of milk marketing in two marketing areas were published. Of particular interest in the Louisville study is material on classification, formula pricing, and the Louisville fall-premium plan of incentives for reducing seasonality of milk production. The Clinton study emphasizes the problems of regulation in a small market and the growth and intermingling of milk supply and distribution areas of neighboring cities.

A report appraising the major criticisms of the manner in which butter prices are established at New York and Chicago was published. Findings were made on the buying and selling practices of wholesale receivers, the manner in which they use central market butter quotations, and reasons for limited market trading on mercantile exchanges. Suggestions were made for strengthening the function of exchanges as a market place and thereby improving the basis for establishing daily butter prices. Studies were made to analyze the responsiveness of daily butter prices to various factors in the supply of and demand for butter. Other studies looking toward an improved understanding of the butter pricing system got under way.

Margins realized by milk distributors on fluid milk in the Duluth-Superior marketing area were the subject of another report issued during the year. Detailed data on sales and prices are included in the report. Weighted average margins on fluid milk items by type of product, size of container, and channel of sale, were computed for 4 selected months during a 2-year period. Of particular interest are comparisons of weighted average margins with the simple price spread computed for a single item such as quarts of standard milk delivered to homes, and the effect on margins of quantity discounts offered for each quart beyond the first quart at each delivery, or for monthly purchases exceeding a stated minimum.

A study of sanitary regulations and milk quality conducted by the National Research Council under contract with the U. S. Department of Agriculture was completed during the year and a final report was published. It was found that certain features of milk sanitary regulations were clearly related to the quality of milk, whereas many details required by some regulations had no proved significance in the production of sanitary milk.

Two manuscripts were prepared relating to the solids-not-fat content of milk, as part of the study of yield of milk powder from a unit quantity of milk. Various formulas which had been used for estimating the solids-not-fat content of milk were tested and formulas were developed on the basis of 2,752 samples of milk analyzed at 16 midwestern and western plants.

Variations in the butterfat test of milk delivered by producers at one milk plant were studied, with a view to comparing the effectiveness of periodic fresh tests versus composite samples, as a means of determining the monthly average butterfat content. It was found that about equal accuracy resulted from 5 fresh tests per month and from composite samples tested every 15 days. When composite samples were tested every 10 days, approximately 10 fresh tests would be required for an equally accurate estimate of the producer's monthly average test. The results suggest statistical tests which may be used

routinely to determine whether the testing programs at individual milk plants are satisfactory.

Studies are being carried out on the classification, for pricing purposes, of milk sold in fluid milk markets. One of these studies will summarize the experience with classified price plans in selected Federal order markets. The other will analyze the effects of classified price plans on producers, consumers, and handlers, under varying conditions.

Marketing and pricing of reserve milk in Kansas, Missouri, and Oklahoma markets is the subject of one survey relating to the price structure of cream and solids-not-fat. Another survey is under way on prices paid for milk by manufacturing plants as a basis for pricing reserve milk. A third survey relates to facilities and marketing arrangements for handling reserve milk and milk dealers' policies in procuring supplies of milk.

FATS AND OILS

Combined production of 5 important oil-bearing commodities—soybeans, cottonseed, flaxseed, peanuts, and tung nuts—was 16,597,000 tons in 1952 compared with 16,619,000 tons in 1951. Price support was mandatory for peanuts and tung nuts under provisions of the Agricultural Act of 1949, but prices of cottonseed and olive oil also were supported under permissive sections of the act. A supply program initiated in 1951 to expand production of castor beans, needed for the manufacture of defense materials, was continued.

Price Support

Peanuts

1951 CROP. Approximately 55,000 tons of Virginia-type peanuts of the 1951 crop were carried over in the Virginia-Carolina area to the 1953 fiscal year as a reserve for edible use. During the fiscal year 5,200 tons of this quantity were sold for edible use, 5,800 tons were sold for crushing, and about 1,000 tons were lost through fire and shrinkage, leaving a balance of about 43,000 tons at the end of the 1953 fiscal year. About 1,000 tons of 1951-crop Virginia-type peanuts had previously been sold for edible use.

Stocks of 8,500 tons of 1951-crop peanuts were on hand July 1, 1952, in the southeast area and another 31,000 tons, farmers' stock basis, were acquired. Sales amounted to 38,200 tons for crushing and 1,300 tons for edible use.

Acquisition of 1951-crop peanuts in the southwest area amounted to 10,200 tons, farmers' stock basis, of which 7,300 tons were sold for crushing and 2,900 for edible use.

1952 CROP. Peanuts grown in 1952 were supported at prices based on 90 percent of parity as of February 15, 1952, which averaged \$239.40 per ton. Base grade support prices were:

Type:	Percentage of sound mature kernels	Price per ton (dollars)
Virginia.....	65	231
Runner.....	65	215
Southeast Spanish.....	70	236
Southwest Spanish.....	70	232

Premiums and discounts were established for grades above and below the base. Deductions for damage content were computed on a graduated scale instead of being handled as "uniform damage deductions" utilized in previous programs.

Price support was made available by means of purchase agreements and CCC farm storage and warehouse storage loans to producers and to producer cooperatives. In addition to loans to producers, the program also provided for loans to the established cooperatives in the three peanut areas: Growers Peanut Cooperative, Inc., Franklin, Va.; GFA Peanut Association, Camilla, Ga.; Southwestern Peanut Growers' Association, Gorman, Tex.

Arrangements were made for the construction of storage facilities in two of the areas. A short crop followed severe drought in the southwestern area, and no peanuts in that area were put under loan or purchase agreement. A total of 98 purchase agreements covering approximately 3,800 tons were executed by producers in the Virginia-Carolina and southeastern peanut areas, however, and 115 farm storage loans were granted covering approximately 2,600 tons.

Elimination of repurchases from shellers and purchasers from farmers as the primary means of supporting the price on peanuts was in line with CCC's general policy of using loans as the method of support for all storable commodities.

CCC made loans to the cooperatives in the Virginia-Carolina area on 18,700 tons and in the southeastern area on 34,300 tons, making a total of approximately 53,000 tons of peanuts of which CCC acquired over 50,000 tons on May 31, 1953.

About 5,600 tons (2,100 in the Virginia-Carolina area and 3,500 in the southeastern area) of the 1952-crop peanuts were sold for crushing from warehouses which had to be vacated. Small quantities of 1952-crop peanuts also were sold for edible use. Storage for carrying the balance of the 46,000 tons of the 1952 crop was arranged.

1953 CROP. The minimum average support price for 1953-crop peanuts was announced at \$237.60 per ton on the basis of 90 percent of the March 15, 1953, parity price. Support prices were made subject to upward revision should a higher level of parity as of August 1, 1953 (the beginning of the marketing year), require a higher support level. Base grade support prices by types of peanuts were announced as follows: Virginia type, containing 65 percent sound, mature kernels, \$229.00 per ton; Runner type, containing 65 percent sound, mature kernels, \$213.00 per ton; Southeast Spanish type, containing 70 percent sound, mature kernels, \$234.00 per ton; and Southwest Spanish type, containing 70 percent sound, mature kernels, \$230.00 per ton.

Premiums or discounts for each 1 percent sound, mature kernels above or below the base grade were announced as follows: Virginia type, \$.36; Runner type, \$.30; Southeastern Spanish type, \$.40; Southwestern Spanish type, \$.30.

Under the 1953 program, farm storage and warehouse storage loans will be available to individual producers in compliance with the peanut program and to any cooperative association. Under this program the cooperatives participating will not be confined to the three associations operating in the peanut areas, as was the case in prior years. In making loans on farm-stored peanuts under the 1953 peanut program, CCC will make an allowance for shrinkage and grade loss while the peanuts

are in storage, and in making loans on warehouse-stored peanuts will absorb the shrinkage and grade loss. The effect of this provision is to reflect to producers a larger portion of the 90 percent of parity support price than in 1952 when the shrinkage and grade loss was deducted from the support price.

Tung Nuts

Price support for tung nuts is mandatory under the Agricultural Act of 1949 at not less than 60 percent nor more than 90 percent of parity. Under the 1952 program, support was available to tung nut producers at slightly above 60 percent of parity or \$67.20 per ton of tung nuts, basis 17.5 percent oil content, and 26.5 cents per pound of tung oil through purchase agreements on tung nuts and purchase agreements and warehouse storage loans on tung oil. As of June 30, 1953, tung oil loans and purchase agreements outstanding totaled over 9,200,000 pounds. Loans and purchase agreements on tung oil were available to producers through June 30, 1953, whereas the availability of purchase agreements on tung nuts ended on January 31, 1953.

Linseed Oil

Total sales of linseed oil during the fiscal year 1953 amounted to 9,066,272 pounds. CCC's inventory at the end of the year was 189,631,148 pounds. (The 300,000,000 pounds of linseed oil transferred to the Secretary of Agriculture June 21, 1951, under the Defense Production Act, is in storage, and PMA continues its inventory management of the supply.)

Cottonseed Oil

Price support to producers of 1952-crop cottonseed was accomplished through direct and indirect loans, purchase agreements, and purchases, including purchases of end products from participating mills. Support to producers was almost entirely effected through an open offer made by CCC to purchase crude cottonseed oil, meal and cake, and linters, under a "package" arrangement, from mills which accepted the terms and conditions of the offer. Mills accepting the offer were required to pay not less than support price for all eligible cottonseed purchased.

Approximately 874,400,000 pounds of crude cottonseed oil was tendered to CCC under the 1952 program. This oil is assigned to refiners and will return to CCC inventory in the form of semirefined oil. Domestic and export sales of crude oil, which was not assigned to refiners, amounted to approximately 13,800,000 pounds through June 30, 1953. Sales of refined oil amounted to more than 7,500,000 pounds.

In addition, approximately 3,800,000 pounds of semirefined cottonseed oil acquired under the 1951 program were refined into cooking oil for use in the school lunch program. Section 32 funds were used for the diversion of this surplus.

Olive Oil

Olive oil produced from 1952-crop olives is supported through producer loans and purchase agreements made available to producers in California and Arizona. Grade A quality oil containing not more

than 1 percent free fatty acid is supported at \$2.50 per gallon. If the free fatty acid content is more than 1 percent but does not exceed 1.4 percent, the support price is \$2.25 per gallon. Olive oil of any lower quality is ineligible for support.

Under the 1952 program, as amended, loans and purchase agreements were available to producers between January 1 and May 31, 1953. At the end of this period approximately 518,000 gallons of olive oil were under price-support loans which will mature on December 31, 1953. Price support for olive oil was made available to producers in 1951, because of the unusually large olive crops at home and abroad. Although the domestic olive crop of 1952 was smaller, continuation of support was deemed advisable because of the heavy carry-over of canned olives from the 1951 stock. This served to decrease the demand for canning purposes and to force olives into the oil market. A price-support program for the 1953 crop of olives is not contemplated.

Peanut Acreage Allotment and Marketing Quota Program

The Department announced on November 17, 1952, a national peanut acreage allotment of 1,678,481 acres and a marketing quota of 663,000 tons for 1953-crop peanuts. On April 2, 1953, the allotments to States producing Valencia type of peanuts were increased by 658 acres, under the provisions of section 358(c) (2) of the Agricultural Adjustment Act of 1938, as amended, to meet a condition of short supply in this type of peanuts. Acreage allotments were made to approximately 150,000 farms.

Agricultural Supply Program

Domestic Procurement

Fats and oils under the CCC's supply program are procured to meet requirements of the Foreign Operations Administration and other governmental agencies. These requirements are met from inventory obtained under the price-support program or by direct purchases pursuant to public announcement on the basis of requisitions or purchase directives and funds received.

During the fiscal year 1953, items were supplied the Foreign Operations Administration (then known as Mutual Security Agency) as follows:

<i>Commodity</i>	<i>Quantity (pounds)</i>
Prime tallow.....	1, 651, 841
Raw linseed oil.....	1, 223, 545
Crude soybean oil.....	2, 500, 230

Castor Bean Production and Procurement Program

A program for the domestic production and procurement of 1953-crop castor beans, similar to the programs in effect for the 1951 and 1952 crops, was authorized by the Secretary of Agriculture at the request of the Munitions Board. This supply program is carried out with CCC funds, and losses, if any, are reimbursable from funds authorized in the Defense Production Act of 1950, as amended. The program is designed to provide a source of supply for castor oil to

supplement importations of castor beans and oil and to gain further experience in the domestic production of castor beans.

PMA continued to acquire sampling and inspection data for use in determining yields and suitability of varieties for particular areas. This information is also available for use in developing official grades for castor beans.

For the second year, schools were held throughout the castor-bean producing areas of Texas, Oklahoma, Arkansas, California, and Arizona to train personnel in the sampling and inspection of beans.

The Department of Agriculture offered to purchase all castor beans grown in 1953 by farmers under contract at not less than 9 cents per pound and made harvesting machinery and hulling equipment available to farmers on a purchase or rental basis to further encourage participation in the program. Castor beans are being grown in areas suitable for commercial production, for which adapted seed is available on both irrigated and dry-land acreages. The program is being carried out through State and County PMA Offices in Arkansas, Oklahoma, and Texas, and by private companies (under contract with CCC) in Arizona, New Mexico, and California, as well as in certain areas of Arkansas, Oklahoma, and Texas.

Under the 1952 program, about 120,000 acres were planted to castor beans, of which approximately 98,000 were harvested. Abandonment was rather high and yields were low because of adverse weather conditions in most areas. The total production from the 98,000 harvested acres approximated 25,000,000 pounds, all of which was acquired by CCC under the program; except for the quantities retained for planting in 1953 these castor beans were processed into oil on a competitive bid basis with a resulting production of about 12,500,000 pounds.

It is estimated that about 148,000 acres have been contracted for planting under the 1953 program of which 95,000 acres are in Texas.

Section 32

PMA contracted for packaging 142,000 gallons of olive oil in 1-gallon and 5-gallon cans. Also contracts were executed for processing 500,000 gallons of refined cottonseed oil into cooking (salad) oil, and for packaging it in 1- and 5-gallon cans.

The olive oil and cooking oil were for distribution to school lunch programs and other eligible outlets. Plans did not require that total deliveries be completed until after the end of the fiscal year.

National School Lunch

A total of 3,657,433 pounds of peanut butter was purchased for the national school lunch program.

Activities Under the Agricultural Marketing Act

A research study of four types of cottonseed oil mills showed that the prepress-solvent process ranked first in terms of net revenue per ton of seed processed, the direct-solvent process second, the screw-press process third, and the hydraulic process last. By comparing his own setup with the relative efficiencies of the different types of mills studied, an operator would have the information needed to decide whether

changes in his own plant would be advantageous. Some headway also was made on a study of the effects of changes in processing methods upon the soybean industry, market outlets, and returns to growers. Certain phases of the cottonseed and soybean studies were carried on under contract with the Texas Engineering Experiment Station, and the Bureau of Agricultural Economics and the Farm Credit Administration cooperated. Two reports were prepared: Comparative Economics of Different Types of Cottonseed Oil Mills and Their Effects on Oil Supplies, Prices, and Returns to Growers (MRR-54), and Cottonseed Oil Mills: Their Comparative Efficiencies and Effects on Prices and Producers' Returns (AIB-103).

A peanut storage study, made by the Virginia, Alabama, and Texas Agricultural Experiment Stations under research contracts indicates: (1) That storage facilities of first buyers are generally adequate for crops of average size; (2) that grade and weight changes during peanut storage are variable; (3) that peanut storage on farms (or by farmers in commercial warehouses at delivery points) has been negligible since World War II; and (4) that seasonality of peanut storage differs at various market levels. A report on this study was being prepared as this report was being prepared.

Experimental phases of a peanut storage study were carried out at sites in Alabama, Georgia, Texas, and Virginia in cooperation with the agricultural experiment stations and Federal-State inspection services in those States, and with the Bureau of Plant Industry, Soils, and Agricultural Engineering and the Bureau of Entomology and Plant Quarantine. Peanuts of high initial quality and varying moisture contents stored satisfactorily for the first 6 months of the marketing year in varying types of storage structures in which varying methods of ventilation were used.

Additional analyses of data collected during the fiscal year 1952 on oilseed storage facilities showed that most cottonseed storage structures were in good condition, that storage building design has an important effect on cost and efficiency of storage operations, and that there has been a shift to storage houses of improved design and construction. A report was being prepared at the end of the year.

A survey of tank storage space for fats and oils showed a total United States capacity of 6,000,000,000 pounds, more than half of which is concentrated at 6 port terminals. An article on this study, Fats and Oils Storage Surveyed, appeared in the August 1952 issue of Marketing Activities.

Tentative findings of a preliminary analysis indicate: (1) That changes in color, moisture, and free fatty acid content of stored, refined cottonseed oil were not large enough to affect market grade; (2) that changes in color of the oil were associated with structural condition of storage tanks; and (3) that during storage, the amount and pattern of changes in color vary for different positions within storage tanks. Indicators of maximum safe storage periods are being sought.

Under a contract with the Iowa Agricultural Experiment Station, a study at 17 lard production plants is being made of variations in lard processing methods, practices, and conditions in Iowa and adjoining States. It was concluded from preliminary analysis that labor cost is the largest single cost item in operating a lard plant,

and that a low degree of correlation exists between costs and volume of operation for individual plants.

Another study of lard, based upon data furnished by the National Independent Meat Packers Association, showed that the relationship between smoke point and free fatty acid content of lard is not nearly as close as has been generally believed, and that some other important factor or factors are required to estimate smoke point.

A report issued during the year, *Detergents, Emulsifiers, and Emulsion Products as Market Outlets for Fats and Oils (MRR-46)*, indicated that (1) production costs are lower for petroleum-derived detergents than for those derived from fats; (2) a pound of fat converted into a synthetic detergent goes about 3.5 times as far in detergent power as a pound of fat converted into soap; (3) in most cases tallow and grease account for only about half of the fats and oils used in synthetic detergents derived from fats, the other half being imported oils, such as coconut oil; (4) consumption of emulsifiers, a basic requirement in many industrial processes, totals about 360,000,000 pounds and nearly all contain some derivative of fats or oils; (5) costs of emulsifiers are mostly for raw materials; and (6) each emulsifier has unique characteristics and raw materials employed usually are not interchangeable.

Analysis of data obtained by the Bureau of the Census indicates that the soybean industry is relatively efficient, although wide variations in practices and costs exist. Economies of the screw-press and solvent-extraction mills are so much greater than those of the hydraulic process mills that use of hydraulic process is restricted to some small and local areas of soybean production in the South, where many mills also crush soybeans in conjunction with cottonseed. Analysis of soybean processing by type of equipment has provided information on the efficiency of product recovery and important locational characteristics of the new solvent processing mills in relation to the older screw-press industry.

A limited study provided information and understanding of the necessary and optimum costs involved in processing castor beans in order to obtain a high percentage of oil recovery. Results of this test were made available to officials in charge of the castor bean program, thus making it possible for those officials to appraise critically processing bids submitted by commercial processors.

Tentative findings indicate that picking cost is the major item involved in the operation of shelling peanuts; that a more accurate and effective sampling system would reduce the error in grading and improve the relative efficiency of preliminary shelling operations; that precleaning before grading and storage should be given more study and consideration as a possible means of cutting costs and improving quality of the end product. Hand labor in the picking department of shelling plants apparently is superior to equipment using a photoelectric cell in crop years when percentage damage to shelled peanuts is small.

FRUITS AND VEGETABLES

Production of fruits, which included a record crop of oranges and a near-record crop of grapes but relatively short crops of apples, plums, prunes, and grapefruit, was about 5 percent less than in 1951, but

slightly above average. Production of vegetables for fresh market was about the same as in the previous year but above average, whereas crops of 11 vegetables for processing were about 9 percent below the 1951 record average but one-fifth above average. Production of potatoes was slightly higher than in the previous year, but well below average and the crop of sweetpotatoes was the smallest since 1881.

Market News

The market news service for fruits and vegetables was conducted through 25 permanent offices exclusive of Washington, D. C., and 29 seasonal shipping point offices. These totals represented an increase of 1 permanent and 1 seasonal office as compared with the previous year. A total of more than 10,600,000 copies of 10,400 reports were issued during the year. In addition to this primary distribution of market news information, there was dissemination through newspapers, radio, telephone, telegraph, and direct teletype.

Improvements in the market news service initiated during the year include:

1. A special potato reporting service for Pennsylvania producing areas under agreement with the Pennsylvania Department of Agriculture.

2. A special service covering imported olive oil prices and market conditions in New York City for the benefit of California olive-oil producers. The information was collected by the New York office and transmitted to the Sacramento market news office for release in California.

3. Weekly reports on fresh strawberries purchased by freezers and canners in Oregon and Washington.

4. During the cranberry season the Boston office provided special market service on cranberries to a number of radio stations for broadcast in the Cape Cod area.

The Palisades, Colo., peach office, closed in 1951 because of the short crop, was operated in 1952. The Louisiana strawberry service was again conducted, under an agreement, by the State market news office in Baton Rouge. The Georgia watermelon office, previously located in Cordele, was operated during the 1952 season at Moultrie.

Cooperative agreements were in effect during the year with 32 States and the Territory of Hawaii. These supplement the Federal service and provide for a much broader coverage than could have been provided by the Federal Government alone. The Pennsylvania agreement was amended to cover the special Pennsylvania potato service initiated during the year. A new agreement was entered into with the Connecticut State Division of Farms and Markets whereby leased wire facilities were made available for use in its Hartford office.

Transportation information on fruits and vegetables included daily reports of carlot shipments, unloads of major fruits and vegetables in 100 cities in the United States and 5 Canadian markets, and truck shipment data. Rail and boat shipments are covered rather completely with the present schedule of reports, but coverage of truck movement is still inadequate.

The national weekly market report on peanuts and the semimonthly reports on honey were continued.

Regulatory Activities

On June 30, 1953, there were 25,599 licenses in effect under the Perishable Agricultural Commodities Act, an increase of nearly 800 from the 24,808 in force a year earlier. Licenses were denied to 14 applicants because of their failure to comply with the requirements of the act. Through failure to pay reparation awards within the time prescribed, licenses of 38 persons, or firms, were automatically suspended as compared with 17 suspensions the previous year. In addition, 2 licenses were suspended for 60 days each and 4 were revoked.

A total of 2,411 complaints were filed and 20 cases reopened, a sharp reduction from the all-time high of 2,779 during the previous year. Almost half of the cases were closed as a result of amicable settlements. Financial adjustments made between parties totaled \$1,248,709, about the same as the all-time high reached in the previous year. Arbitration cases totaled 79 as compared with 108 in the previous year. Cases of misbranding increased from 108 in 1952 to 114 in 1953. One license was suspended for 60 days because of repeated violations of the misbranding provisions of the act.

Reparation orders were issued disposing of 201 cases with awards totaling in excess of \$300,000. Although the number of cases settled through formal orders was about the same as in the previous year the amount of reparation awards was substantially increased. Only 17 cases were appealed to the courts during the year and in only 1 case was the Department's decision reversed.

The number of cases filed and settled do not indicate fully the value of the regulatory activities. In numerous cases industry representatives request information concerning the activities from either the Washington or field offices. These lead to the settlement of many differences within the industry without resorting to proceedings under the act.

Under the Produce Agency Act, 39 cases were filed as compared with 46 during the preceding year. The majority of cases arising under this law were disposed of by amicable settlement. There was 1 conviction under this act, the defendants being given suspended sentences of 12 months and ordered to make restitution to the growers. There were no prosecutions under the Export Apple and Pear Act.

Under the Standard Container Acts of 1916 and 1928 a total of 2,061 samples of 339 types and sizes of containers were examined, 72 of which required correction. Of the samples requiring correction, 56 had been corrected by the end of the year. Tests were made of sample containers from 115 factories. On June 30, 1953, 188 factories were making or were equipped to make containers subject to the provisions of the act. The number of samples examined during the previous fiscal year totaled 1,925. Two factories were found to be making illegal packages. Both voluntarily agreed to discontinue making those packages and burned the stocks on hand.

Inspection

Fresh Products

A total of 1,268,370 carlots of fresh fruits and vegetables, including farmers' stock peanuts, were inspected during the year as follows:

At shipping point, 724,422; in receiving markets, for commercial inspection, 50,239, and for public and private agencies, 57,376; raw products for processing plants, 385,179; and farmers' stock peanuts, 51,154.

Shipping point inspection is carried out under cooperative agreements with each of the 48 States, the Territory of Hawaii, and Puerto Rico. At the close of the year inspection was being conducted at 75 terminal markets. The terminal office at Providence, R. I., was reopened during the year and the one at Fort Knox, Ky., was closed.

Ninety-eight training classes for inspectors were held and nearly 900 inspectors were trained. These classes give careful instruction and practical training to new licensees and provide refresher courses to trained employees.

Inspection of red sour cherries for processing was expanded in Michigan because, at the request of the industry, inspection was required.

Processed Products

The following processed products were inspected during the year: Canned fruits and vegetables, 103,757,325 cases; canned marine products, 189,321 cases; frozen products, 1,291,448,841 pounds; dried products, 296,635,601 pounds; dehydrated products, 7,205,819 pounds; and other processed products, 191,818,108 pounds. Compared with the previous fiscal year these figures represent decreases for canned and dried products and increases for frozen, dehydrated, and other processed products.

The number of plants approved to pack under continuous inspection, as of June 30, 1953, was 145 compared with 140 a year earlier. There was an increase in continuous inspection for both canned and frozen fruits and vegetables.

At the end of the year inspection was provided through 34 field offices. Thirty-six cooperative agreements were in effect with State agencies, associations of processors, or trade associations. As during the previous year, inspection was performed in California to assist in determining compliance with the State marketing order for dates. All processed citrus products were inspected for the State of Florida to assist that State in determining compliance with the Florida Citrus Code of 1949. A considerable volume of inspection was performed on deliveries to the States of Illinois, New York, Pennsylvania, and Virginia, as well as on smaller deliveries to other States and city institutions.

Standardization

Fresh Products

Rapid changes in cultural and marketing practices created an almost unprecedented demand for service in standardization of fresh fruits, fresh vegetables, edible tree nuts, and miscellaneous products during the past fiscal year. Continued progress was made in the development and revision of United States standards for grades of these commodities and in the development of visual aid material to assist inspectors in the proper and uniform interpretations of the standards. However, standardization work is complicated because of conflicting ideas that frequently develop among industry representatives regarding

specific requirements under consideration in new standards being developed or in the revision of those in effect. When such conditions arise, additional research is required, which not only causes delay but often necessitates holding work in abeyance pending further study and analysis.

At the end of the fiscal year, 140 standards for 73 products were in effect. These included 40 standards for 20 fruits; 83 standards for 45 vegetables; 17 standards for 8 miscellaneous products; 31 standards for 25 raw products for processing; and 9 consumer standards.

New United States standards for collard and broccoli greens and for Florida grapefruit, oranges, and tangerines became effective during the fiscal year. Proposed standards for dandelion greens and for brussels sprouts were developed. At the request of the processors in the Kennett Square, Pa., area, research was conducted and a draft of proposed standards for mushrooms for processing was prepared.

The following standards were revised: Shelled lima beans for processing, shelled almonds, cauliflower, table grapes (*Vinifera* type), Persian limes, mustard greens or turnip greens, California oranges, winter pears, shelled pecans, and pineapples. The research on seven of these had been conducted during the previous fiscal year. Research was conducted and proposed revisions drafted for English walnuts, spinach leaves, fresh tomatoes, and sawdust-pack grapes. Research was also conducted in the field on standards for cucumbers, eggplant, green corn, lettuce, asparagus for processing, snap beans for processing, and corn for processing. Proposed drafts of revisions of standards for shelled Virginia-type peanuts and for farmers' stock of runner, Spanish, and Virginia peanuts were developed. Additional investigation was made in connection with the development of new sizes and pack arrangements for oranges in $1\frac{3}{5}$ -bushel wirebound boxes.

Requests are on file for the revision of United States standards for celery, pineapples, and bunched shallots. Requests have been received for the development of new standards for avocados, bananas, Chinese cabbage, dill, kohlrabi, okra for processing, root parsley, black-eyed peas for processing, Italian hot peppers, prunes for processing, and topped radishes.

About 1,600 visual aids, including plaster models, black and white and color photographs, painted plexiglas color guides, and plexiglas area-diameter gages, were distributed to field inspection offices. These aids are used by supervisors in training inspectors, in checking their work, and for reference by individual inspectors in properly interpreting the standards.

The production of new models included those illustrating the color and shape of apples, sweetpotato models illustrating veining, color guides illustrating minimum color for red sweet peppers for processing, slides illustrating minimum color for canned tomatoes, painted photographs illustrating blanched celery, and black and white photographs illustrating the bunch structure of table grapes, rough-type Russet scab of potatoes, shape of potatoes, solidity of cabbage, and spreading of asparagus tips.

Experimental work has been conducted on the following visual aids: Color photographs illustrating russetting of apples, painted plastic color guides illustrating minimum color for lima beans for processing,

painted photographs illustrating green color permitted on a U. S. No. 1 eggplant, color chart for grading walnuts, color photographs illustrating the discoloration of the vascular ring of potatoes; and detailed sketches of certain quality factors, such as spreading of celery.

Nearly 115,000 copies of standards and bulletins were distributed. During the year the Federal specifications for fresh peaches, California table grapes, and Florida oranges, grapefruit, and tangerines were completed.

Processed Products

Activities under the standardization program for processed products were largely confined to the development of new and the revision of existing standards, assistance to inspectors in the interpretation of standards, the development of visual aids, and the conduct of studies to develop objective methods and tests for improving the standards, assistance in formulating and revising Federal and military specifications, and assistance to Federal, State, county, and city institutions in formulating specifications in connection with their purchase of processed products.

At the close of the fiscal year a total of 111 standards covering processed products were in effect. These included 70 standards for canned products, 9 for dried, and 32 for frozen. New United States standards for frozen mixed vegetables, succotash, and summer squash became effective during the fiscal year. Amended or revised standards were issued for canned green and wax beans, lima beans, blackberries, carrots, sweet cherries, cream-style corn, whole-kernel corn, fruit preserves or jams, grapefruit, mushrooms, and plums; dried currants; and frozen carrots, whole-kernel corn, and lima beans. Standards had been published, but had not become effective, at the close of the fiscal year for canned chili sauce, tomato sauce, apples, tomato catsup, fruit cocktail, and cream-style corn, and for frozen cooked late squash. In addition, information had been collected and drafts developed for standards for peanut butter, canned pimientos, frozen strawberries, canned and frozen whole-kernel corn, frozen asparagus, and canned concentrated orange juice. Preliminary investigations are in progress for canned cucumber pickles, peas, asparagus, apple butter, and sauerkraut, and frozen green beans. Recommendations for revising the standards of dried apples and plums and raisins are under consideration.

Requests were received for new standards on frozen concentrated grapejuice, canned mixed fruit, dehydrated low-moisture fruits, and frozen lemon juice, limejuice, concentrate for limeade, peas and carrots, applesauce, and french-fried potatoes.

During the fiscal year 15 Federal specifications were developed, amended, or completely revised. These included frozen asparagus, lima beans, cauliflower, limejuice and rhubarb, canned beets, blackberries, cherries, sweet corn, green and wax beans, fruit cocktail, mushrooms, and plums, and dried prunes and raisins. Five military specifications were revised.

During the year visual aids for assisting inspectors were developed as follows: Models of cherries to illustrate minimum red color requirement; wax pineapple slices and units to illustrate various trimming

allowances; colored wax models to illustrate key colors for sulfur-bleached and golden-bleached processed raisins; plaster models to illustrate pear pieces; oil-color sketches to illustrate discolored kernels in canned and frozen corn, and color comparators for classifying the color of canned lima beans.

Extensive investigations and experiments were conducted to find methods and materials by which more effective visual aids could be produced by developing methods of making molds over actual processed specimens and durable wax models possessing translucency and realism that was not possible with plaster models. Studies are under way to develop objective tests for measuring grade factors.

More than 75,000 copies of standards were distributed during the year.

Marketing Agreements and Orders

Twenty-five marketing agreement and order programs covering 20 fruits and vegetables and tree nuts were in effect in 21 States. The estimated farm value of the commodities covered by these programs was in excess of \$600 million.

Marketing agreement and order programs were in effect during the fiscal year for California and Arizona grapefruit; California and Arizona lemons; Florida oranges, grapefruit, and tangerines; California Tokay grapes; Colorado peaches; Georgia peaches; Utah peaches; California Bartlett pears, plums, and Elberta peaches; California Buerre Hardy pears; Washington and California winter pears.

The programs for Tokay grapes and Georgia peaches were amended during the fiscal year. At the close of the fiscal year proposed amendments were under consideration for lemons and Tokay grapes and new programs were under consideration for California oranges and olives.

Potato marketing agreement and orders were in effect during the fiscal year in the following States: Idaho and Oregon; Colorado; Oregon and California; North Carolina and Virginia; eastern South Dakota; Massachusetts, Rhode Island, Connecticut, New Hampshire, and Vermont; and Washington.

Similar programs were in effect for California raisins and dried prunes, Colorado fresh peas and cauliflower, California-Oregon-Washington hops, California almonds, Oregon and Washington filberts, California-Oregon-Washington walnuts, and Southeastern pecans. The program for hops was amended during the year and was terminated at the close of the fiscal year. Proposed amendments were under consideration at the close of the year for dried prunes.

Canned Fruit and Vegetable Set-Asides

During the 1952 crop season defense food orders provided for the set-aside of quantities of 13 canned fruits and 11 canned vegetables for purchase by the military to meet defense requirements. The Quartermaster Corps procured the supplies set aside under these orders. At the request of the Munitions Board, similar orders were issued requiring set-asides for the 1953 packs of various canned fruits and vegetables.

Honey Price Programs

Price support on honey is mandatory. Honey programs were continued through the 1953 fiscal year in the three-way attack on the surplus of honey supplies—the same kind of attack that has been used in the two preceding seasons. The price-support program provided a floor for prices received by beekeepers, whereas export and diversion payment programs (financed by sec. 32 funds) provided supplementary means of moving domestic honey from normal domestic trade channels.

For the 1952-53 marketing season, beginning April 1, 1952, the price-support program was changed from one based on purchases from honey packers to one based on loans to and purchase agreements with beekeepers and associations of beekeepers. The national support level, 11.4 cents per pound in containers of 60 pounds or more, was broken down by regions and categories of honey to reflect customary differentials for honey of different color and market-use in different parts of the country.

In spite of record honey production, resulting from a near-record average yield per colony, prices to beekeepers were stabilized throughout the season. Assisted by an unusually heavy movement (more than 29,000,000 pounds) under the export payment program, the heavy crop was marketed with little difficulty. Approximately 9,300,000 pounds were placed under loan and 5,000,000 pounds were covered by purchase agreements. However, 7,300,000 pounds were redeemed or withdrawn for sale in commercial trade channels. Another half-million pounds were subsequently sold from CCC inventory. Honey diverted to new uses amounted to only 230,000 pounds.

During the early part of the 1953-54 marketing season, from April 1 through June 30, only 4 loans were entered into covering approximately 65,000 pounds. During the same period approximately 6,100,000 pounds were moved under the export program and 150,000 pounds under the diversion program. The national level of price support for the 1953-54 season was established at 10.5 cents per pound, in containers of 60 pounds or more, with differentials for color, market-use, and region corresponding to those of the preceding marketing season. Although the average support price for 1953-54 was 0.9 cent per pound below that of the preceding season, both levels represented 70 percent of parity for the respective seasons.

Other Stabilization Activities

Section 32 purchases were made during the fiscal year to assist in removing surpluses of red cherries, Bartlett pears, and Gravenstein apples. In view of the large production of citrus fruit and raisins, assistance was given to these industries through export-payment programs to assist in moving supplies to foreign countries and through purchase of concentrated orange juice. Assistance was provided producers of a large crop of walnuts through diversion operations. In addition, purchases of canned Clingstone peaches, grapefruit sections, tomatoes, tomato paste, beans, and peas were made with section 6 funds. Information showing the quantity and the cost under various section 32 and section 6 programs is shown in table 3.

TABLE 3.—*Summary of purchase, export payment, and diversion operations for fresh fruits and vegetables, tree nuts, and honey, by type of program, fiscal year 1953*

Type of program and commodity	Unit	Quantity	Estimated total cost
			<i>Dollars</i>
Sec. 32 purchase:			
Canned RSP cherries-----	Case (basis 24/2)---	85,392	320,828
Fresh Bartlett pears-----	Standard box-----	557,998	1,934,167
Fresh Gravenstein apples-----	do-----	34,314	108,307
Concentrated orange juice----	Case (12/46oz.)----	92,300	931,883
Total-----			3,295,185
Sec. 32 export:			
Lemons-----	Box, fresh equiv----	90,312	148,650
Oranges-----	do-----	4,281,100	5,013,042
Grapefruit-----	do-----	519,725	392,560
Dried prunes-----	Ton-----	1,380	79,014
Raisins-----	do-----	90,138	4,640,327
Honey-----	Pound-----	34,278,176	1,312,048
Total-----			11,785,641
Sec. 32 diversion:			
Walnuts, shelled-----	Pound-----	3,250,650	1,040,208
Honey-----	do-----	160,000	6,450
Total-----			1,046,658
Total sec. 32-----			16,127,484
Sec. 6 purchase:			
Canned clingstone peaches--	Case (basis 24/2½)---	205,456	1,253,480
Canned grapefruit sections--	Case (basis 24/2)---	205,000	751,834
Canned tomatoes-----	Case-----	409,420	1,684,715
Canned tomato paste-----	Case (6/10)-----	194,480	1,258,538
Canned beans-----	Case-----	140,930	519,534
Canned peas-----	do-----	259,778	862,175
Total sec. 6-----			6,330,276

Research

Since the program for training wholesalers and retailers in improved methods of handling and merchandising fresh fruits and vegetables began in November 1947, more than 30,121 retailers and their employees have attended training classes conducted under contract by the United Fresh Fruit and Vegetable Association. In the 1953 fiscal year, 3,660 retailers attended such training classes. During the year increased emphasis was placed on the part of the program that provides for the establishment of merchandising departments for fresh fruit and vegetable wholesalers, and the training of wholesale merchandising personnel. Eleven merchandising managers and 174 merchandising assistants were trained.

By establishing merchandising departments and training employees progressive wholesalers have provided a needed link between pro-

ducer groups and retailers in developing an effective program of fresh fruit and vegetable merchandising. Too often in the past, efforts by growers and shippers to stimulate consumption of particular commodities have not been fruitful because there was no effective organization to carry the program from the producer to the retailer.

Twenty-seven prints of the film, *Merchandising Fresh Fruits and Vegetables*, have been purchased by organizations or agencies outside the Department. These include wholesalers and trade organizations, State agricultural extension services, State departments of agriculture, Canadian wholesalers, and the Canadian Government. In addition, 23 prints are available on loan from the Department and from film libraries.

Under contract with the Market Research Corporation of America and in cooperation with groups in the fruit industries, information has been obtained concerning consumer purchases of fresh citrus fruits, canned single strength and frozen concentrated juices, and dried fruits. In addition, information has been collected concerning the availability of these products in retail food stores throughout the country. The Michigan cherry interests participated in the availability surveys conducted during the last year in order to obtain information regarding stocks of canned red sour cherries in retail outlets at the close of the marketing season. These data are used by all segments of the industry concerned, from grower to processor to retail distributor, as a market guide and as a basis for formulating marketing policies. Industry funds for the collection of this information are matched by Department funds.

Considerable progress has been made on the development of cheaper and improved containers for shipping fresh plums. This work is conducted by the California Grape and Tree Fruit League under contract with the Department. Research was conducted and a report issued on prepackaging Thompson seedless grapes at retail. This research, conducted in cooperation with the United Fresh Fruit and Vegetable Association and the National Flexible Packaging Association, indicated that sales of grapes could be increased by displaying them both in bulk and in packages. A study to determine the feasibility of prepackaging lettuce in retail stores was begun during the year as well as a study to determine the feasibility of ripening and packaging fresh peaches in a tomato repacking plant. An investigation on prepackaging of carrots was continued and broadened in scope through a contract negotiated with the Western Growers Association of Los Angeles, Calif.

Emphasis in standardization research for processed fruits and vegetables during the fiscal year has been placed on methods and tests for determining quality. Studies are in progress on: (1) An objective method for determining defects in tomato products; (2) the development of permanent color standards for peanut butter; (3) the development of permanent color standards for canned and frozen orange juices; (4) the standardization of procedures for making color determinations of canned tomatoes and canned tomato products; (5) the development of an objective method for classifying the grind of peanut butter; and (6) the development of a rapid method for determining the total solids of high concentrate tomato products.

Work in cooperation with the New York (Geneva), Ohio, and Indiana Agricultural Experiment Stations on the grade-yield relationships of tomatoes was completed during the year. These studies were made to determine the grade and quantity of canned tomatoes or canned tomato products that can be processed from a given quality of raw product and to ascertain the nature of possible improvements in the U. S. grades for the two types of products. The results of these studies were published jointly by the experiment stations and the Department. A cooperative study with the Wisconsin Agricultural Experiment Station was continued to find improved methods for determining the quality of fresh and processed peas and to determine the yield and quality of processed peas that might be obtained from various grades of raw peas. During the 1952 tomato-processing season, field experiments were undertaken to determine the practicability of using electronic instruments for the measurement of color of raw tomatoes.

PMA cooperated in a regional fruit marketing study of the utilization of the apples grown in the Cumberland-Shenandoah area of Virginia, West Virginia, Maryland, and Pennsylvania. The results of this study indicate that in comparing returns from alternative market outlets for apples, and probably for other fresh fruits and vegetables, it is necessary to consider differences in quality as well as apparent differences in prices. The failure to consider quality in some instances may give rise to erroneous conclusions. As a part of the Northeastern regional potato marketing project, PMA assisted the Agricultural Experiment Station of Cornell University in making a study of the commercial possibilities of grading potatoes according to specific gravity. PMA also continued to assist the Maryland Agricultural Experiment Station in developing objective tests for the measurement of quality factors in vegetables.

GRAIN, FLAXSEED, SOYBEANS, BEANS AND PEAS, AND SEEDS

The dollar volume of price support extended on 1952 crops of grain was more than three times larger than the amount extended on 1951 crops—a direct result of increased supplies, decreased demand, and considerable downward pressure on prices. It was apparent during the year that acreage allotments and probably marketing quotas would need to be proclaimed for the 1954 crop of wheat. Prior to July 1, all wheat farmers in the United States were contacted to obtain basic data on their wheat operations for the purpose of establishing farm allotments, and preparatory work for holding the marketing quota referendum was begun. The International Wheat Agreement of 1949 was revised and renewed by action of the International Wheat Council. An overall goals program did not appear necessary in 1953, but changes in production were suggested with respect to a few crops.

Price Support

Highlights of price-support operations for individual 1952 crops are as follows:

WHEAT.—National average support price, \$2.20 per bushel, based on 90 percent of the July 1, 1952, parity price. Support extended: 460,500,000 bushels, having a value of \$1,001,900,000.

RYE.—National average support price, \$1.42 per bushel, based on 80 percent of the August 15, 1952, parity price. Support extended: 182,000 bushels, having a value of \$244,000.

CORN.—National average support price, \$1.60 per bushel, based on 90 percent of the October 1, 1952, parity price. Support extended: 416,300,000 bushels, having a value of \$651,200,000.

BARLEY.—National average support price, \$1.22 per bushel, based on 80 percent of the August 15, 1952, parity price. Support extended: 9,885,000 bushels, having a value of \$11,501,000.

OATS.—National average support price, 78 cents per bushel, based on 80 percent of the August 15, 1952, parity price. Support extended: 21,600,000 bushels, having a value of \$16,131,000.

SORGHUM GRAINS.—National average support price, \$2.38 per hundred pounds, based on 80 percent of the August 15, 1952, parity price. Support extended: 2,062,000 hundredweight, having a value of \$4,639,000.

RICE.—National average support price, \$5.04 per hundred pounds, based on 90 percent of the parity price as of August 1, 1952. Support extended: 209,000 hundredweight, having a value of \$1,088,000.

SOYBEANS.—National average support price, \$2.56 per bushel based on 90 percent of the November 15, 1951, parity price. Support extended: 14,500,000 bushels, having a value of \$37,200,000.

FLAXSEED.—National average support price, \$3.77 per bushel, based on 80 percent of the August 15, 1951, parity price. Support extended: 5,500,000 bushels having a value of \$20,300,000.

DRY EDIBLE BEANS.—National average support price, \$7.87 per hundred pounds, based on 80 percent of the parity price as of January 15, 1952. Support extended: 2,260,000 hundredweight, having a value of \$18,900,000.

HAY AND PASTURE GRASS SEED.—Support prices ranged from 3.5 cents to \$1.00 per pound. Support extended: 102,200,000 pounds, having a value of \$39,000,000.

WINTER COVER CROP SEEDS.—Support prices ranged from 3.5 cents to 19.0 cents per pound. Support extended: 55,600,000 pounds, having a value of \$4,662,000.

("Support extended" refers to total price-support loans made and purchase agreements signed, including quantities redeemed by producers through repayment of loans and quantities not delivered under purchase agreements. "Value" refers to the amount of money disbursed by the Commodity Credit Corporation in the form of loans, with no deductions for loans repaid, plus an allowance by the CCC for its potential obligation on purchase agreements.)

Production Adjustments

Wheat

The carryover of wheat on July 1, 1953, increased to 580,000,000 bushels from 256,000,000 bushels on hand July 1, 1952. With a relatively large crop of wheat in prospect for 1953, the Secretary of Agriculture announced on April 15, 1953, that work would be started in

the preparation of possible acreage allotments and marketing quotas on the 1953 crop. Despite the short period of time remaining for completing the necessary work prior to determining farm wheat acreage allotments, basic data were obtained and listing sheets covering approximately 1,720,000 farms were prepared. In June of 1953 it became apparent that the total supply of wheat in 1953-54 would be more than 1,700,000,000 bushels, the largest crop of record, and well above the marketing quota level. On July 1, 1953, the Secretary of Agriculture proclaimed marketing quotas on the 1954 crop of wheat, and announced that a referendum would be held shortly to determine whether wheat farmers, subject to marketing quotas, would favor or oppose such quotas.

Corn

Although a corn crop of 3,300,000,000 bushels was harvested in 1952, the carryover of corn on October 1, 1952, had been reduced to the extent that the total supply of corn in 1952-53 was substantially below the marketing quota level. Therefore, on November 14, 1952, the Secretary of Agriculture proclaimed that there would be no acreage allotments or marketing quotas on the 1953 crop of corn.

Rice

On November 28, 1951, the Secretary of Agriculture announced that there would be no acreage allotments or marketing quotas on the 1952 crop of rice, and on December 10, 1952, he made a similar announcement for the 1953 crop. In both years, the total supply of rice was substantially below the level which would require marketing quotas.

The International Wheat Agreement

The sales quota guaranteed the United States for the fourth year of operations under the International Wheat Agreement, ending July 31, 1953, was 253,127,726 bushels. As of June 30, 1953 (during the first 11 months of the wheat agreement year), sales for export to 41 countries aggregated 239,109,000 bushels of wheat, or wheat-equivalent in the form of flour. All wheat was sold at or near the agreement maximum price—the equivalent of \$1.80 per bushel, basis bulk wheat in store Fort William-Port Arthur, Canada, in terms of United States currency.

During the fiscal year 1953, export payments were made to commercial exporters on shipments pursuant to sales, some of them during the third wheat agreement year and others under the fourth wheat agreement year. These payments, made on 215,652,000 bushels of wheat, and wheat-equivalent in the form of flour, amounted to \$120,942,000, or an average of 56 cents per bushel. In addition, the Commodity Credit Corporation provided 8,052,000 bushels of wheat from its own stocks at IWA prices that represented an aggregate difference of \$4,923,000 between such IWA prices and current market prices, or an average difference of 61 cents per bushel. This difference on the Corporation's exports, plus the export payments to commercial exporters, resulted in a total cost for the fiscal year of \$125,865,000 on the total of 223,704,000 bushels, or an average of 56

cents per bushel on exports both by the Corporation and through commercial channels.

The International Wheat Agreement of 1949, which otherwise would have expired on July 31, 1953, was revised and extended through July 31, 1956, by action of the International Wheat Council at the resumed eighth session in Washington, D. C., February 2 to April 13, 1953, and by subsequent acceptance by the governments of the member countries. The United Kingdom was the only former member that did not sign the renewed agreement, and four new members—Jordan, Korea, Yugoslavia, and Vatican City State—acceded to the renewed agreement.

Drought Emergency Hay Program

On August 8, 1952, the Department announced a program to provide emergency hay supplies to farmers in the Kentucky-Tennessee drought area at a cost that would make it economically feasible for them to maintain their dairy cows, heifers, and basic beef herds. The program was soon extended to farmers in the drought-stricken States of Alabama, Arkansas, Georgia, Louisiana, Mississippi, North Carolina (two counties), Oklahoma, and Texas.

The President authorized the Housing and Home Finance Agency to allocate \$3,000,000 of Public Law 875 funds to be used in reimbursing CCC for nonrecoverable costs in supplying hay. On October 14, 1952, the President allocated an additional \$5,000,000, for use under this program, which was expected to carry the program to February 1, 1953. However, due to the demand for hay, an additional \$1,500,000 was allocated by the President making a total of \$9,500,000 for use under this program.

Hay was first purchased in Wisconsin, Minnesota, Michigan, Iowa, and Illinois—the areas of greatest surplus supplies. However, the area of purchase was expanded into Canada, the embargo on Canadian hay being lifted during December 1952. This made it possible to supply most of the Southeastern States from Canada and meet the demands from the Oklahoma-Texas region.

Tonnage allocations were revised in January. Texas and Oklahoma regions were in a critical position. In February, when the additional \$1,500,000 was made available, new allocations were made to each State on the basis of needs. Louisiana did not request an additional allocation because of improved pasture conditions.

Favorable weather in February 1953 and early spring pastures lessened the demand for hay in the Southeastern States and early shipments to the Southwestern States during February and early March met foreseeable requirements. The program was terminated as of March 10, 1953.

Foundation Seed Program

The program under which breeder, foundation, and registered seeds are purchased, in order to increase supplies of improved varieties of grass and legume seeds, was continued. Under production contracts 1,219 pounds of Atlantic alfalfa, 148 pounds of Narragansett alfalfa, 962 pounds of Ranger alfalfa, and 173,718 pounds of Kenland red clover seed were purchased. Production contracts have been executed

for the 1953 production of seed from 22 acres of Atlantic alfalfa, 118.5 acres of Narragansett alfalfa, 97.5 acres of Vernal alfalfa, and 16.6 acres of Pennscoth red clover.

Seed-Supply Program

Small quantities of seeds and plant materials were procured for use in connection with the technical assistance programs of the Foreign Operations Administration (formerly Mutual Security Agency) and the Department of State. Cooperating with indigenous plant experts, technicians in charge of these programs select the kind of crops to be experimented with and send requisitions to PMA. Many kinds of plants are requisitioned for use in improving seed stocks and in developing new kinds of crops. Approximately 176 varieties of vegetable seeds and 133 varieties of field seeds were purchased and shipped to Liberia, Libya, Italy, Formosa, Greece, Turkey, and Indochina.

Market News

Market news reports were issued during the 1953 fiscal year through 6 Federal offices, the same as a year earlier. Reports were issued through 12 Federal-State offices—Texas was added to the list—compared with 11 a year earlier. Additional requests for market information and reports continued and approximately 1,500,000 mimeographed copies of market reports giving current prices, market conditions, and information about factors affecting the supply and demand for grains, feeds, rice, beans, peas, hops, and seeds were issued directly from the Federal offices. More than 600 radio and a few television stations, many farm, trade, and daily papers used these market reports in their news programs.

A number of reports previously issued by the Federal offices were made more effective by added local information in the releases from Federal-State offices. For example, Texas inaugurated a daily rice report during the harvesting period and a weekly rice review in August of 1952. In the participating States about 300,000 copies of market reports were prepared and released direct to local growers, feeders, and industry. Local radio stations and newspapers also aided in disseminating this information.

States participating in the Federal-State program were Alabama, Arkansas, California, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oregon, Tennessee, Texas, and Virginia. Projects for reporting prices and market data for local areas, particularly in Arkansas, Louisiana, Maryland, North Carolina, Texas, and Virginia, have been developed and strengthened. These data, combined with market information and prices in the large midwestern terminal markets, give the farmers and feeders in these States definite information to guide them in their production and marketing.

Regulatory Activities

United States Grain Standards Act

Continued heavy export and intermarket movements of large grain crops accounted for the inspection of more than 4 billion bushels of grain during the year.

The total number of appeals from licensed inspectors' grades declined from 100,000 in the fiscal year 1952 to about 85,000. Exporters of soybeans called appeals on many cargoes of this commodity, because of dissatisfaction with the quality of soybeans received in Europe and Japan. This development and the fact that foreign buyers cannot obtain certification of the State of origin resulted in additional appeals on soybeans at interior points. The appeal certificates reflected the origin of the shipment and served as a general indication of the area of production.

Direct supervision coverage amounted to about 10 percent of all inspections. Intermarket supervisions of inspections of grain movements between markets supplemented the direct supervision, particularly of inspections at markets at which no Federal supervisors were located.

Three inspectors' licenses were suspended by the Secretary of Agriculture pending investigations. After thorough investigations had been made and corrective actions taken, 1 license was restored, 1 canceled, and the other remained suspended. Changes in inspection organization and methods which contributed to improper inspection performance were made to prevent any further recurrence of such misgrading.

A total of 771 corrective action reports covering misgrades of lines of grain or single lots were initiated largely on the basis of intermarket records which make appeal and supervision information obtained in one market most useful in correcting inspection tendencies in another.

In several instances it was found that terminal elevators had loaded grain in railroad cars, with screenings or low-grade grain underneath grain of a relatively high grade, in such a manner that representative samples could not be obtained.

Federal Seed Act

Importations of 120 million pounds of agricultural and vegetable seeds valued at \$21 million exceeded by 12 million pounds the highest previous annual importation and totaled 22 million pounds more than in 1952.

Apparent violations of the interstate provisions of the Federal Seed Act, 93 percent of which were reported by the States in keeping with previously arranged cooperation, were 39 percent more than in 1952. The 948 new cases involved apparent violations in 39 States. Prosecutions in Federal court were completed in 31 cases, resulting in fines exceeding \$17,000.

The methods of testing seeds in foreign commerce were discussed at a meeting of the International Seed Testing Association and so-called international rules patterned closely after those followed in the United States were adopted. Efforts to standardize variety names and methods of testing for varietal purity were continued.

Prevention of Adulteration of Grain

Under terms of memorandums of understanding with the Food and Drug Administration effort was continued during the year to prevent the adulteration of grain. Cases of apparent adulteration were referred to that Administration for appropriate action. One of these involved the alleged intent to mix screenings with wheat intended

for export. Prompt action on the part of the two agencies resulted in the screenings being disposed of into feed channels.

The program under which out-of-condition low-grade grain is considered unfit for mixing with grain of milling quality again proved effective in preventing the adulteration of wheat. There was a noticeable decrease in the number of lots which were examined under this program. Only 2,174 lots were considered unfit this year compared with 5,352 lots in 1952.

Assistance was rendered to the Food and Drug Administration in the prevention of the use of wheat containing poisonous fungicides in food products. Many cases of mixtures of such wheat were encountered by the licensed inspectors, particularly in the northwestern area and these were reported to the Food and Drug Administration.

Standardization

The formal requests made by several grain exchanges and boards of trade that the wheat standards be revised by eliminating the subclasses in Hard Red Winter and Hard Red Spring wheat received consideration. A survey of marketing practices regarding trading in the subclasses of these wheats as well as by protein contents was made through the field offices. After analyzing these data it was decided that the various subclasses of these two classes of wheat would not be changed.

Official United States standards for dry peas and split peas, which became effective on July 20 and August 10, 1937, respectively, and the tentative United States standards for lentils, which were recommended November 13, 1942, were completely revised after careful consideration of all the information obtained at an informal public hearing and in writing. These revised standards will become effective August 1, 1953.

Studies of the relationship between electrical properties and moisture content in the various grains were continued to determine the accuracy of calibration of electric moisture-testing equipment in the inspection of grain. As a result of these studies, four revised calibration tables were issued, effective July 1, 1953, for use respectively in determining the moisture in barley (class I), western barley (class III), oats, and rye.

A third series of samples of safflower seed were obtained and quality factors which might be included in standards for this kind of seed were determined. The data on all samples collected is being tabulated.

Cooperative work with the Bureau of Plant Industry, Soils, and Agricultural Engineering was continued. Milling, baking, and chemical tests were made on a large number of samples of Hard Red Spring wheat; and milling, macaroni making, color, and chemical tests on samples of durum wheat. This is part of the Department's wheat-breeding program, usually in cooperation with the State agricultural experiment stations, under which new varieties of wheat are tested in the search for superior varieties for use in the various wheat-producing areas. The recent serious threat of the new stem rust, race 15B, to the Hard Red Spring and durum wheat crops of the United States increases the importance of this wheat-breeding program.

Milling, baking, and chemical properties were determined on wheat representing receipts of the various subclasses and grades of country-run wheat received at the principal terminal markets.

In cooperation with the Provisions Technical Committee, amended, revised, or new Federal specifications for 29 commodities were prepared or reviewed. In addition, drafts of five military specifications were reviewed at the request of the Department of Defense.

Market Inspection of Farm Products

The total quantity of commodities inspected under the permissive inspection authority was about the same as that of 1952. The quantity of beans and peas inspected was about 20 percent less than in 1952, but there was an increase in the quantity of seed inspected for origin and of miscellaneous commodities. The quantity of hops inspected declined because of restrictions under the hop marketing agreement program, which expired June 30.

The total quantity of rice inspected was about the same as that for the previous year. Nearly 2,000 samples of rough rice, representing over 9 million bags, were inspected for milling yield in California. The milling data shown in certificates thus issued were used as a basis for the sale of this rice by growers to millers.

The total number of inspections and quantity of hay inspected were slightly greater than those of 1952. Samples of hay used in feeding trials and curing and storage studies were graded for a number of State agricultural experiment stations. Samples illustrating the various grades of hay under the United States hay standards were furnished to agricultural colleges and county agents in 27 States for classroom instruction purposes.

The inspection of CCC-owned commodities for condition was confined largely to vegetable oils, beans, and cottonseed meal.

For the second year inspections were made of castor beans produced under the castor bean production and procurement program. Inspections included 1,130 samples submitted by CCC representatives and 230 carlots sampled by PMA at destination. In addition the resulting castor oil, totaling nearly 10 million pounds, was inspected as delivered.

Research Under the Agricultural Marketing Act

Transparent films of different kinds, weights, and colors were tested for their ability to protect whole and split peas from bleaching when exposed to varying types and intensities of light usually found in retail stores. A report entitled "Merchandising Peas and Split Peas Packaged in Transparent Films" was issued. It included recommendations for better merchandising practices as well as recommendations for minimizing color loss through the use of proper weights, types, and colors of film.

The modified sedimentation test developed last year has proved to be equally applicable to hard and soft wheats as a result of tests on approximately 1,000 wheat samples and 500 experimentally milled flour samples. Collaborative studies of the test by a committee of the American Association of Cereal Chemists revealed certain short-

comings in the test. Accordingly, another modification has been developed in an attempt to obtain greater replicability between laboratories. Under the latest procedure 178 samples were tested, and additional collaborative work is planned. The method for the sedimentation test will be published in the sixth edition of *Cereal Laboratory Methods*, of the American Association of Cereal Chemists.

The dielectric method developed 2 years ago for determining rapidly the oil content of soybeans was found to give very good interlaboratory agreement. Studies on the use of this method for flaxseed have been completed and the modified method is being published. It is believed that the method for flaxseed will be as well received by the trade as the method for soybeans.

Further studies of the comparison of the results of laboratory tests with actual milling results of rough rice showed that they were in fairly good agreement with a few exceptions. The new laboratory type of rice milling equipment that is used for official grading of rice has influenced some commercial rice mills to install more modern milling equipment. Work was continued on the development of suitable rice grading equipment for use in separating whole kernels from broken kernels of milled rice.

Cooperation with the Bureau of Dairy Industry was continued in feeding tests on the nutritive value of alfalfa-timothy mixtures as compared with alfalfa containing little or no grass. The first trial using 6 different lots of hay for a period of 150 days with dairy heifers has just been completed but the data have not been analyzed. Data obtained in a survey of the quality of hay produced by New Jersey farmers in cooperation with the New Jersey Agricultural Experiment Station are being summarized.

Seed schools were conducted at 7 locations at which experienced seed analysts from 21 State seed laboratories and 37 commercial seed laboratories were represented. Efforts to improve methods of testing were continued in studies at Beltsville, and cooperatively with the Iowa State Experiment Station. The 440-page handbook, *Testing Agricultural and Vegetable Seeds*, (AH-30) was made available for distribution.

Progress was made in simplifying the standard fat acidity test by using a grinder-extractor in place of a mill and Soxhlet extractor, for the preparation of the grain extract, and in substituting a graduated medicine dropper for titration in place of a burette. The second year survey to determine the normal fat acidity value of freshly harvested grains of various kinds was completed and the results published. Arrangements have been made for collecting similar samples of the 1953 crop for this phase of the study.

Studies were continued on the performance of several types of automatic grain samplers. Preliminary studies show that the Woodside automatic grain sampler developed in Canada for use in sampling grain from a moving conveyor belt has considerable promise. A few of these samplers have been installed in grain elevators in different parts of this country and their performance is being studied in comparison with other automatic samplers and with conventional methods of sampling grain.

During the year information was collected by the Iowa and Kansas Experiment Stations, under contract with the Department, concerning

costs of storing grain reserves at alternate locations until it is required for food, feed, or other uses. Storage costs at country and terminal elevators were obtained by personal interview and examination of accounting records, at Government bin sites from PMA records, and on farms by case studies. Publication of findings and recommendations will be made during the 1954 fiscal year.

Work was done on evaluating the toluene distillation method, the air-oven method operating at different temperatures, and drying over phosphorus pentoxide in a desiccator at room temperature as basic methods for moisture determination in whole corn. A study was made of the loss of volatile matter from corn at 100° C. and the gain in weight of a moisture absorbent from the volatiles. The two were identical. In connection with practical equipment for the determination of moisture, a dielectric meter was designed and constructed for experimental studies.

Other Research

Cooperation has continued with other Department agencies and State agricultural experiment stations to develop improved methods, equipment, and structures for maintaining the quality of grain stored at bin sites and on the farm.

Techniques were developed during the previous years' experiments to successfully aerate and cool stored grain at CCC bin sites in order to prevent moisture accumulation which results in mold damage and increased insect activity. This practice also reduces the necessity for frequent turning of the grain which is an expensive operation. During the 1953 fiscal year tests were directed toward improved techniques using minimum rates of air flow requiring smaller scale equipment.

Five- to eight-inch tubes partially perforated and inserted vertically in the center of the bin were substituted for the more elaborate duct and perforated floor systems previously used for this purpose. Indications are that satisfactory results can be obtained with fractional horsepower motors supplying about one-fifth of the air-flow rate currently used. The pilot studies made this year will be expanded during the 1954 fiscal year to obtain more conclusive evidence for shelled corn and to apply the techniques and equipment to stored wheat. Improved designs of air ventilators also will be tested for use at bin sites where electric power is not readily available. These developments will be applicable to both farm and commercial storage with slight modifications.

Tests to control insect infestation by recirculating the fumigant have shown that more complete kills can be obtained with less material and in shorter time. The use of forced air to recirculate the chemical also results in more even distribution of the dosage throughout the bin. Additional experiments were initiated during the year to determine the effectiveness and the best methods of application at varying dosage levels of aerosols, dusts, and sprays. Application of repellent materials as bins are filled is being tested for effectiveness over long periods of time to reduce the need for periodic fumigation of CCC reserve grain stocks.

Specialized tests are being carried on for the purpose of determining methods of controlling insects and molds in stored pea beans. Improved methods of stacking and ventilating flat storage in bags and

bulk storage in bins that will be applicable to both farm and commercial warehouse storage, as well as at bin sites, are being investigated. Research on the causes and classification of types of mold formation on stored pea beans and the development of control measures, was initiated in cooperation with Michigan State College.

Field testing of the recirculating pea bean drier was postponed because 1952 crop beans were harvested at moisture contents which did not require artificial drying. The equipment will be tested during the 1953 harvest in Michigan.

Mechanical difficulties have delayed the evaluation of high frequency electronic equipment for destroying hidden insect infestation in grain. The University of Nebraska is redesigning and pretesting the apparatus in cooperation with the manufacturer, prior to making further bin-site applications.

Comparative tests of blue lupine low-germination seed as a fertilizer in cooperation with the Georgia Experiment Station indicate that nitrogen in blue lupine meal is as readily available and as effective as that in cottonseed meal. Tests on summer pastures are being continued.

Flaxseed, grain sorghum, and rice drying and storage studies were continued in cooperation with the Louisiana and Texas Experiment Stations. Emphasis during the year was on drying techniques with both heated and natural air, aeration, and insect control measures. Indications are that grain sorghums can be dried satisfactorily under conditions in south Texas by using unheated air. Repellent dusts applied to clean milo with low uniform moisture content controlled insects effectively for 5 months, but the dusts were unsatisfactory when used with high moisture grain which contained substantial quantities of foreign material. Forced ventilation maintained high germination and low fat acidity values in flaxseed during a 10-month storage period. Stratification of moisture in bin drying of flaxseed and rice with heated air was reduced by reversing air flow during the process. By using high temperature air (175° F.) seed was dried in a newly developed farm dryer, without deterioration or reduction in germination.

In cooperation with State colleges and State extension services, demonstrations, conditioning and storage techniques, and facilities available to producers were carried out in Delaware, Georgia, Michigan, New Jersey, North Carolina, Tennessee, and Virginia.

LIVESTOCK, MEATS, AND WOOL

Cattle numbers reached a new record high in January 1953, a continuation of the cyclical increase which began in 1949. Hog production, however, showed an opposite trend. The 1953 spring pig crop was 10 percent below the 1952 crop and was the smallest since 1948. Sheep and lamb slaughter was large in relation to the small number of sheep and lambs on farms and ranches.

Continued high levels of employment and consumer incomes resulted in a continuing strong demand for meat products. Prices of hogs rose from below parity during the second half of 1952 to above parity during mid-1953, largely in response to reduced pork production. However, prices for lard and the fat cuts of pork continued low.

A pronounced downturn in cattle prices occurred in the second half of 1952 and continued through the middle of 1953. After the substantial increase in numbers on farms, cattle slaughter set new high records during the first half of 1953. Lamb prices, after showing a moderate decline during the last half of 1952, strengthened and by mid-1953 were only slightly below parity.

Price Support

Cattle prices dropped below parity in November 1952 for the first time since December 1938. By June 1953 cattle prices had reached their lowest levels since October 1946, and averaged only 77 percent of parity, the lowest percentage of parity since January 1935.

The drastic decline in cattle prices brought many appeals for direct price support and for other assistance to cattlemen. An industry advisory committee, meeting with the Department in March and June 1953, advised against price supports on cattle on the ground that price supports would delay needed adjustments in the industry. The committee made a number of other recommendations which have been put into effect to assist in stabilizing prices and to encourage beef consumption. One of the committee's recommendations was that maximum quantities of beef be purchased under the regulations set down in section 32, as a surplus-removal operation.

The 1953 wool price-support program which began on May 1 was similar to the 1952 program. During most of the year the average price of wool was below the support level of 90 percent of parity as of April 1, the beginning of the marketing season. On April 1, 1953, a PMA Commodity Office was established in Boston, to administer certain phases of the wool price-support program.

Under the 1952 wool program, which ended on April 30, 1953, advance loans were made covering 42,250,000 pounds of wool and totaling \$17,643,000, all of which were either paid or converted to non-recourse loans. Nonrecourse loans, totaling \$70,530,000, were secured by 114,733,000 pounds of grease and scoured wool. Pulled wool purchased totaled 6,297,000 pounds. Nonrecourse loans totaling \$11,785,000 and secured by 20,280,000 pounds of wool were paid before maturity. CCC wool inventory, June 30, 1953, which includes both grease and scoured wools, showed 6,297,000 pounds of pulled wool and 94,378,000 pounds of shorn wool.

Because mohair prices were above the support level during the past year, price support for mohair was not necessary.

Procurement and Sales

During the period March through June 1953, 3,576,000 pounds of frozen carcass beef and 800,000 pounds of canned beef and gravy were purchased from domestic sources for delivery to the Greek Government under the mutual security program. The carcass beef, mostly Utility grade, cost an average of 27 cents per pound and the canned beef 37 cents per pound f. o. b. processing plants.

From March to July 1953, 1,121,000 pounds of frozen beef and 2,700,000 pounds of beef and gravy were bought with section 32 funds as a surplus-removal operation. The meat purchased was donated to

the nonprofit school lunch programs and other eligible outlets. The frozen beef, which consisted of ground beef, diced stew beef, and roasts prepared from the triangles of Good or better grade carcasses, was purchased at an average cost of 40 cents per pound. The canned beef and gravy, acquired at an average price of 34 cents a pound, was prepared from Canner, Cutter, and Utility grade carcasses. On June 30, 1953, the program was changed to acquire, during the season of increased marketings of grass cattle, a sizable quantity of ground beef from Commercial grade carcasses or cuts and also a large quantity of canned beef and gravy from lower grade beef.

Twenty-four contracts covering 26,500,000 pounds of smoked pork products, executed in late 1952 for delivery in 1953, were completed. These products were also donated for the school lunch program.

Packers and Stockyards Act

As of June 30, 1953, 325 stockyards were posted, 4,965 active livestock market agencies and dealers were registered, and 1,365 poultry sales agencies were licensed under the Packers and Stockyards Act. The number of meat packers subject to the provisions of Title II of the act totaled 1,914. Bonds on file by registrants under the act to assure payment for livestock purchased or sold totaled approximately \$44,000,000.

It is estimated that at the end of the fiscal year the approved tariff charges of registered market agencies, terminal stockyard companies, and posted auction markets are equivalent to \$69,500,000 on an annual basis. Requests for increases in rates and charges totaling approximately \$2,250,000 were filed during the year. Through informal negotiations with the petitioning companies, the requests were scaled down to \$1,350,000, thus resulting in a reduction of approximately \$900,000. The increases in tariff charges reflect further increases in salaries and wages granted by stockyard companies and market agencies to their employees and increased costs of maintaining stockyard structures.

Typical of investigations conducted during the year at posted livestock markets were those made at Greeneville, Tenn., and Flemingsburg, Ky., which disclosed that some registrants were issuing false weight tickets on livestock being bought and sold, that unregistered and unbonded dealers were operating under fictitious names, and that false records were being made. Formal actions were taken resulting in orders being issued suspending the registrations of the guilty market operators for a reasonable period and fines and injunctions were obtained in Federal district courts against the unregistered dealers. Evidence was developed by investigations at posted livestock markets at Evansville, Ind., and several points in Nebraska that dealers and their employees were guilty of weighing frauds. Formal actions are pending against those responsible for these violations. Formal administrative actions were also instituted against registrants at Houston, Tex., Tulsa, Okla., Springfield, Mo., and Fargo, N. Dak., to correct unlawful market practices.

Several cases in which false records were made by persons subject to the act for the purpose of perpetrating a fraud were forwarded to the Department of Justice for prosecution under the criminal provisions of the act. Evidence was presented before the Federal grand jury in Chicago resulting in the indictment of 21 dealers and weigh-

masters involved in weighing frauds. One indicted dealer pleaded guilty and was sentenced to 1 year in prison, fined \$5,000, and placed on probation. The remaining cases are pending in the United States district court in Chicago. During the year cease-and-desist orders were issued against two meat packers for failure to pay for livestock purchased and for demanding refunds on livestock purchased at various markets. This demand for refunds was based on alleged shrink of livestock from such markets to packing plant or low dressing yields realized by the packer in the slaughter of the livestock.

A total of 807 livestock scales at supervised public stockyards were tested and inspected, the total number of tests being 1,911, an average of 2.4 tests per scale. The scales proved to be accurate, within tolerance, in 86 percent of the tests. Tests of 350 of the 1,200 livestock scales owned or operated by packers were reported to PMA, the scales being reported as accurate in 78 percent of the tests. A total of 344 tests were made of 235 scales used for weighing live poultry at designated markets and the scales were found to be accurate in 97 percent of the tests. Owners of scales found to be inaccurate were required to have them adjusted to make them accurate before re-using them.

The books and records of 238 registrants and packers were audited during the year. On the basis of these audits and further investigation by district supervisors, 35 stipulations were executed by registrants in which they agreed to cease and desist from engaging in practices prohibited by the act and formal actions were instituted in 58 cases involving more serious violations. Formal proceedings were carried out in 135 cases, 102 of which were completed and closed by the end of the year.

Insecticide, Fungicide, and Rodenticide Act

Approximately 28 percent more new products and 10 percent more distributor brands were registered in the fiscal year 1953 than in 1952. There was an increase of 2,631 label submissions, and 2,365 more letters of comment or criticism were sent out than during the previous year. As 5 years had elapsed from the first registration of herbicides and rodenticides, provision for the cancellation of such registrations was required. Regulations on the renewal of registrations were issued, and regulations on permits for shipment of economic poisons for experimental use were revised.

Experimental work on the effectiveness and safety of several new insecticidal chemicals had progressed to the point where they could be accepted for registration in the course of the year. Some of them, including malathion, heptachlor, aldrin, and dieldrin, were found to be acceptable for use on food crops.

General acceptance by the trade of the limitation on chlordane uses imposed by interpretation 19 has been noted and has resulted in a strong shift to lindane in such products as household space sprays. Now the possibility of food contamination by lindane vapors has arisen and is being given attention.

Seed treatment materials were tested during the year to observe the effectiveness of new and old formulations in controlling seed decay, damping off, and seed-borne diseases. On the basis of these tests, plans were developed for additional testing of the fungicides in field plots.

The ever-increasing use of chemicals germicidally active in high dilution in the formulation of commercial germicides has materially increased the difficulty in evaluating label claims. It has been demonstrated repeatedly that most samples collected must be tested by a number of procedures if reliable estimates of value are to be made.

A polarographic method of analysis was adopted for determining DDT in DDT-aldrin-sulfur formulations and for determining other insecticidal ingredients. Also, a method for determining high-boiling phenols in disinfectants was investigated and adopted.

PMA examined 2,310 samples of economic poisons, of which 326 were found to be so seriously misbranded, adulterated, or otherwise in violation of the act as to warrant citation or seizure. In addition, 113 products were less seriously misbranded, and labeling was corrected by correspondence. Of the total number of samples, 1,132, or 49 percent, were from products not previously found in interstate commerce. Seizure action was initiated on 50 shipments, including 43 different economic poisons. Prosecution of 3 manufacturers for 5 shipments of economic poisons was recommended. Original and supplemental registrations of economic poisons during the year totaled 8,861, this number bringing the total number of registrations since the law became effective to 52,961. In addition, letters of comment or criticism were sent to registrants relative to 17,086 labelings for products submitted for registration during the year.

Market News

The number and location of field offices remained the same as during the previous year. With the removal of price ceilings on meat, reporting of the wholesale meat trade was resumed on a full-time basis. The price trends on cattle and calves and their meat products were generally downward during the fiscal year and the demand for current price information was greater than ever before. A larger-than-usual number of requests for weekly and annual average prices of cattle by class, grade, and weight selection at most of the more important cattle markets were received.

Collection of actual weekly slaughter data from an increased number of areas was started at the beginning of the fiscal year for use in estimating the total weekly slaughter under Federal inspection. As a result of the larger sample and the improved geographical distribution of the areas included in the sample, a more accurate weekly estimate has been provided.

Charts showing the grades of slaughter steers and models representing the revised standards for slaughter barrows and gilts were prepared and distributed to all field offices. Many offices were able to obtain appropriate display space in livestock exchange lobbies and hallways so that the models and charts are available for wider observation by livestock producers and market agencies. They have also been frequently used to demonstrate the grade standards at meetings of livestock producers and at marketing schools.

In all wool trade reports, price quotations for each class and grade are accompanied by the price (in parentheses) which represents the loan value of the same class and grade under the current price-support payment. The wool reporter also maintains a schedule of estimated

monthly average prices of all classes and grades of wool listed in the CCC loan schedule. Actual sales prices are seldom available on many of the classes and grades of wool.

The number of auction markets in Florida and Alabama reported by the State departments of agriculture, in cooperation with the United States offices of Thomasville, Ga., and Montgomery, Ala., have been increased.

Standardization and Grading

Meat

The cessation in February 1953 of mandatory grading required by the Office of Price Stabilization marked the end of another of several periods in the past decade in which it has been necessary on short notice to recruit, train, and activate a vastly augmented corps of qualified and competent meat graders.

During the fiscal year, 9,338,000,000 pounds of meat of all types, classes, and grades were officially graded and certified. In comparison with the previous year, the number of technical personnel in the field service was reduced upon the return to permissive grading.

The grading of meats in nonfederally inspected plants is limited to plants meeting minimum inspection requirements of the Secretary of Agriculture. The lifting of the requirement for compulsory grading by the Office of Price Stabilization on February 6, 1953, brought a large volume of requests for approval of nonfederally inspected plants for continuation of the grading service. Within a short period of time, 160 nonfederally inspected establishments were surveyed and those found in compliance with minimum inspection regulations were permitted to retain the grading service. Three hundred forty-nine nonfederally inspected establishments have been granted permission to use the Federal meat-grading service.

During the past year, a new stamp for identifying the grade of meat was put into use. This new stamp is a shield enclosing the letters "USDA" and the grade name, and is applied in a ribbonlike form on all carcasses or cuts graded. This new grade stamp has been officially registered by the United States Patent Office.

During the year nine specifications were prepared, coordinated with those of other Government agencies, and made ready for issuance as official Federal Specifications. Seven additional specifications are in process of preparation and coordination at the present time. Assistance in the development of specifications to meet individual procurement needs was given to several States, municipalities, institutions, and other large-scale users of meat desiring to utilize the meat certification and acceptance program of the Department. Complete specifications were developed covering all meat items purchased or prepared for Public Health Service and for about 14 States, counties cities, and individual users of the acceptance service. In addition, specifications were prepared or reviewed for use in procuring five meat items purchased by PMA.

Wool and Mohair

Revised specifications were developed for fineness for all grades of wool tops. After public notice of the proposed revision has been

given, the new standards for all grades of wool top will be officially promulgated.

Laboratory procedures and techniques for subsampling and processing of samples for the determination of shrinkage of grease wool have been improved. The new recommended laboratory procedures have given a high degree of consistency in shrinkage determinations. The analysis of data resulting from testing more than 2,000 samples of CCC loan wool indicates that it may be unnecessary to test wool samples for certain residual impurities, but to substitute therefor a constant factor value.

Tests with the Suter stapler, to determine comparability of results between industry and Government laboratories in measuring length of wool top fibers, were carried out in cooperation with various members of the American Society for Testing Materials. Likewise, PMA cooperated in the testing of the micronaire for use in determining average fineness of wool. Improvement and standardization of measurement techniques, it is expected, will help to establish confidence on the part of the wool trade in the reliability of techniques and equipment used in determining the various qualities of wool.

During the year, 107 practical forms of the official standards for grades of wool and wool top were prepared and distributed to public agencies, such as the Bureau of Customs and the military agencies, to individuals, and to members of the wool trade.

Research

Research on slaughter hogs and pork carcasses was continued with the primary aim of developing objective grade standards reflecting differences in the proportion of lean to fat cuts and in pork quality. Measurements of and data on cut-out parts were collected on a substantial volume of sow carcasses in cooperation with the Rath Packing Co., Waterloo, Iowa. These data were analyzed, both separately and in combination with data on sow carcasses selected the previous year, to determine relevant factors that may be applied in the development of objective standards for grades of slaughter sows and sow carcasses.

Based upon data previously reported, the official United States standards for grades of slaughter barrows and gilts, and barrow and gilt carcasses, were formally adopted and became effective September 12, 1952. Demonstration and field testing of the standards and their application in marketing, which had been conducted for 3 years before the standards were promulgated, were continued at 8 major meetings.

A summary report was prepared on the study, conducted under contract, to evaluate the relationship of certain physical, chemical, histological, and organoleptic characteristics of beef to carcass grades. In addition to evaluating some of the factors influencing beef quality, this intensive study will contribute much to the general scientific knowledge of beef.

Work has been continued on the development and use of illustrative material in obtaining more uniform interpretation of the grade standards. The manual of color photographs illustrating the minimum grade requirements for beef is making an important contribution toward the maintenance of uniform grading. Similar manuals of color photographs illustrating minimum requirements for the grades of

veal, calf, and lamb have been used extensively on a test basis by meat-grading supervisors during the past year. Posters illustrating the grades of slaughter cattle were reproduced in volume and made available for general distribution early in the year. Models illustrating the grades of slaughter barrows and gilts were approved and made available to the industry for purchase.

During part of the fiscal year PMA cooperated with a western agricultural experiment station in a research project entitled "Comparison of Prices and Net Returns from Selling Livestock in Western Range Areas Through Auction Markets and Terminal Markets." Under this project a market reporter was assigned at Amarillo, Tex., to report the auction market there on Monday, Tuesday, and Friday each week, and at Clovis, N. Mex., each Wednesday and Thursday. Prices by class, grade, and weight were tabulated at each sale session and the price range for the bulk of sales of each class, grade, and weight was determined. The reporter also prepared a complete narrative market report each day for release to local newspapers and radio stations. The price data for each sale was tabulated so that comparisons for each week during the period could be made with prices reported from terminal markets in the surrounding area. The reports were discontinued at the end of March 1953 when funds were exhausted.

Emphasis has been given to the study of the relationship of fineness, variation, and length of fibers in grease wool to the same qualities in the top and noil resulting from processing the grease wool. These relationships will form the basis for establishing quantitative specifications for grades of grease wool which in the past has been classified by grade on a visual basis. In addition, they will permit determination of the grade of top which may be expected from processing grease wool of known specifications. Conversely, they will indicate the range in fineness and length of staple that are required in grease wool to produce top of certain grade.

Through the cooperation of other Government agencies, wool handlers, manufacturers, and commercial combers, 79 additional lots of wool were tested during the year. Progress in this study was made public in November 1952 in a publication entitled, "Relationship of Fineness in Wool Top, Noil, Card Sliver, and Grease Wool." In connection with these studies tools and techniques are being developed and perfected for sampling lots of grease wool objectively for fineness and length of staple. Studies to help increase grower income through improved practices of marketing wool were continued by arranging for the processing of representative portions of various lots of wool and comparing returns from the sale of the processed products with those received for the grease wool.

Economic Analyses

Production, price, and consumption trends for livestock, meat, wool, and other livestock products were analyzed to serve as a basis for the formation of policies and programs to encourage desirable levels of production, stable prices, and efficient marketing. A continuous program of forecasting livestock slaughter, meat production, changes in livestock numbers, farm livestock output, and changes in meat and

meat animal prices was conducted in cooperation with other Government agencies to develop information for administrative purposes. Intensive study of the cattle situation and prospects was made to answer the marked increase in the number of queries directed to the Department during a period of severe adjustment in the cattle industry, to assist in the formation of programs for the industry, and to determine the type of meat products to be purchased by the Government. Assistance was given in outlining programs for dealing with the particular problems in the drought areas.

The effects of foreign trade in livestock, wool, and other livestock products were determined as a part of a general program of giving assistance to producers and of answering inquiries directed to the Department. In accordance with section 22 of the Agricultural Adjustment Act of 1938, as amended, an investigation was made of the effects of imports of wool and wool tops on the Department's price-support program, and testimony with supporting brief was presented to the United States Tariff Commission.

During the first half of the fiscal year statistical and economic information in regard to legal minimum prices for livestock was supplied to the Office of Price Stabilization, under provisions of the Defense Production Act, as amended, for its use in administering the price-control provisions of that law.

Reports analyzing the probable effects of various proposed legislation on the livestock, meats, and wool industries, were made.

A basis was developed for determining CCC sales price of wool based on a percentage of the appraisal price, and a study was in progress to determine a basis for establishing dollar-and-cents selling prices for the various grades and classes of wool. Other problems of wool disposal were studied so that sales may be made with a minimum impact on domestic prices and supplies.

POULTRY AND EGGS

Production of eggs, chickens, and turkeys reached a record level during the fiscal year 1953. The production increase for eggs and chickens just about kept pace with population growth so that per capita consumption remained essentially the same as the year before. Turkey production, however, was 8 percent greater than the previous year, and per capita consumption rose from 5.2 pounds to 5.4 pounds per person—a record high.

Price Programs

During the last 6 months of the calendar year 1952, prices received by farmers for eggs averaged 48.2 cents per dozen, or 86 percent of parity, an unfavorable price in view of the relatively high level of feed prices and other production costs. During the first half of 1953, however, prices to farmers increased substantially over the same period the year before. In fact, the average price for the first half of 1953 was an all-time high record for a 6-month period. Because feed prices were somewhat lower than during the same months in 1952, returns to producers showed a marked improvement.

Prices received by producers for farm-raised chickens and commercial broilers were relatively low during most of the fiscal year, averaging only 84 percent of parity. Production of commercial broilers continued to increase rapidly. About 10 percent more birds were marketed during the 1953 fiscal year than during the preceding year. Although producer prices for commercial broilers fell to relatively low levels in the spring of 1953, no surplus removal program for broilers was requested by producers nor was any inaugurated during the year. The 1953 fiscal year ended with chicken supplies and prices in a favorable position. Storage stocks were low, consumer demand was strong, and supplies to be marketed during the following months did not appear to be burdensome.

The turkey industry requested the Department to inaugurate a surplus removal program. The 1952 crop of heavy-breed turkeys was 10 percent larger than the year before, the output of Beltsville Small Whites was 34 percent larger, and the increase in total tonnage was 14 percent. Permitting this sharply increased supply to move into normal channels of trade would have forced prices to levels that would have meant serious losses to turkey growers. So the Department announced a surplus removal program on August 27, 1952. From September 1952 through January 1953, the Department purchased a total of 48,200,000 pounds of ready-to-cook turkeys at a total purchase cost of \$26,000,000. The entire quantity was channeled to the school lunch program before the end of the school year in June 1953. Surplus removal purchases, although they amounted to only 6 percent of the 1952 crop of turkeys, contributed greatly toward stabilizing producer prices.

During the spring of 1952, a surplus removal program for shell eggs had been conducted. A total of 226,459 cases of eggs were purchased at a cost of \$3,600,000. Delivery was made beginning September 1 and running through December 1, and the eggs were immediately distributed to nonprofit school lunch programs and other eligible outlets.

Inspection and Grading

As of June 30, 1953, 144 poultry plants were under contract for sanitation service, and 219 plants for the inspection of poultry for wholesomeness. It is anticipated that with the trend toward larger marketing of ready-to-cook poultry, continued increases in these activities will take place.

During the 1953 fiscal year, major changes were effected in the supervisory areas, through consolidation of area offices at San Francisco, Des Moines, and Philadelphia. Likewise, the areas under supervision were consolidated, and it is anticipated that these changes will bring about greater efficiency of operation, both from the administrative and technical standpoints. Grading and inspection services to the poultry industry are financed by fees collected from those who use the service, except for a small amount of appropriated funds used to cover a minor part of national supervisory costs.

The scope of PMA's poultry inspection and grading activity is reflected in table 4.

TABLE 4.—*Poultry products graded or inspected, fiscal years 1952 and 1953*

Product	1952	1953 ¹
Shell eggs, graded.....cases..	15, 200, 013	15, 401, 270
Frozen eggs, graded.....pounds..	15, 751, 070	11, 127, 348
Dried eggs, graded.....do.....	59, 176, 339	2, 457, 202
Liquid, frozen, and dried eggs produced under Federal inspection.....pounds..	232, 441, 721	244, 720, 241
Poultry, graded.....do.....	333, 735, 899	298, 671, 274
Turkeys, graded.....do.....	219, 245, 669	253, 114, 520
Live poultry, graded.....do.....	3, 857, 161	3, 918, 309
Poultry processed under U. S. Department of Agriculture sanitary standards.....pounds..	1, 260, 763, 905	1, 302, 852, 688
Poultry inspected for condition and wholesomeness.....pounds..	778, 959, 723	912, 958, 585

¹ Partly estimated.

Standardization and Quality Conservation

Three minor changes were made in the regulations governing the grading and inspection of poultry. These involved the denial of service, size of samples used in grading poultry, and a provision to permit poultry from nonofficial plants to be further processed under the inspection and grading service in the event that such poultry is seized pursuant to pure food laws.

A proposed revision of the minimum requirements for sanitation, facilities, and operating procedures in egg breaking and drying plants was prepared and published under rule-making procedures. These requirements apply to egg-product plants operating under supervision of the Department's voluntary egg product inspection service. The requirements were developed after consultation with industry and representatives of the Armed Forces food procurement services.

Several representatives of PMA participated in meetings with State marketing officials at which it was sought to achieve increased uniformity and coordination in poultry service programs conducted by PMA and the State departments of agriculture. The State marketing officials recommended the establishment of a marketing officials-industry technical advisory group to advise with the Department on a continuing basis.

Several meetings were held with representatives of industry and cooperating agencies to consider the labeling of poultry parts. Initial drafts of terms and definitions for poultry parts were prepared.

There were meetings with the Federal Specifications Board and with representatives of the Army Quartermaster Corps to consider specifications for poultry, eggs, and other commodities. Progress was made in coordinating Federal and military specifications with U. S. official standards and grades and the regulations of the Department of Agriculture. Cooperation was given to the Bureau of Animal Industry in a series of egg grading tests to study the variability of grader accuracy as related to varying intensities of candling light illumination.

Several poultry eviscerating plants were visited for the purpose of analyzing the application of United States standards and grades for poultry and the regulations governing the facilities and sanitary operating requirements. Photographs of ready-to-cook poultry were obtained for use in the preparation of slides and charts depicting poultry quality standards.

A number of photographs showing egg quality were duplicated in black and white and in color for distribution to colleges, State departments of agriculture, and to publishing houses for reproduction in educational material released by them.

The preparation of reproductions of color transparencies illustrating egg quality on projection slides was completed. One hundred thirty sets of 24 slides each, illustrating 140 different quality conditions, were sold to members of industry, State departments of agriculture, and educational institutions. Seven sets were sold to foreign countries.

A color chart, entitled "Know the Poultry You Buy," was issued in November 1952, in two sizes: A large wall chart, and a small size reproduced as PA-170, with consumer information on the folds. About 22,000 large and 80,000 small charts have been distributed.

About 8,500 copies of the large size and 27,000 copies of the small size of the color chart, "Know the Eggs You Buy" (PA-70), were requested.

A practical interpretation of the poultry grading and inspection programs, Poultry Buying Guides for Consumers (HG-34), was prepared for publication.

A three-panel consumer education exhibit, entitled "Ready-to-Cook Poultry," was prepared with the cooperation of the Exhibits Service.

Cooperation was given to other agencies in the Department, to educational and trade organizations, and to food editors of daily papers and household magazines, in the preparation of material on the selection, quality, and care of poultry and eggs. Information was provided for use in Department press releases and radio and television programs, and in addition a member of the staff participated in three television programs. Quantity users of poultry and eggs were reached through an illustrated article prepared for a restaurant magazine having wide circulation.

An Egg Grading Manual was in rough draft stage at the end of the year.

PMA participated in the conduct of the annual regional egg grading school sponsored by the Northeastern Poultry Producers Council, William and Mary College, Virginia Department of Agriculture, and the United States Department of Agriculture. The school was held at William and Mary College, Williamsburg, Va., with 120 individuals participating.

Marketing Methods and Distribution

The Shell Egg Packaging Technical Advisory Group, meeting in February at Kansas City, Mo., considered the Department's proposals for revision of Recommended Specifications for Standard Packages and Packs for Shell Eggs. It was decided to change the title of these standards to read: "United States Standards for Shell Egg Packs, Con-

tainers, and Packaging Materials," and to defer conclusion of specifications for the so-called one-trip or "truck" fiber egg cases until a survey of shippers could be made to determine whether or not the performance of such cases is generally satisfactory. The group also recommended that a special committee be formed to develop plans and a program for a poultry and egg marketing school for salesmen, technicians, and public relations men in the packaging industry. Plans were completed for this school to be held at the University of Maryland in September 1953. It will be sponsored by the University of Maryland, the Northeastern Poultry Producers' Council, Southeastern Poultry and Egg Association, Maryland State Department of Markets, several associations of container and packaging manufacturers, and the United States Department of Agriculture.

A release entitled "Considerations in the Use of Hardscald, Subscald, and Semiscald Methods in Dressing Poultry" was prepared and 2,500 copies were distributed to industry, educational institutions, and governmental agencies.

PMA has developed a cooperative program for wider distribution of research publications on poultry and egg marketing subjects. In response to a circular announcement, an additional distribution of 171,000 copies of 6 research publications prepared in PMA was made. Through a similar cooperative arrangement, 8 cooperative research publications emanating from State agricultural experiment stations were distributed; also, 4 groups of mimeographed summaries, covering 36 recent publications, based on reports of poultry and egg marketing research, issued by other agencies in the Department, by State agricultural experiment stations, and by other research organizations, were prepared and distributed to approximately 2,000 persons who had requested such information.

Research

Egg Marketing Research

Work was begun in cooperation with the University of California on the detection of cleaned and spoiled eggs. Attention was focused on conductivity tests and ultraviolet irradiation methods.

In cooperation with industry personnel, the quality change was appraised for natural, oiled, and thermostabilized shell eggs during transit by truck from the Midwest to Washington and under varying conditions at destination. Preliminary results indicate thermostabilized eggs declined less in quality during transportation and under varying conditions of storage than oiled or natural eggs. There was little difference between quality decline for the oiled and natural lots, but the former showed less change in weight. Evidence suggests that thermostabilized eggs may be cartoned a considerable distance from the point of distribution.

Two types of mechanical egg-breaking machines were studied. Results obtained, compared with those of commercial hand-breaking operations, indicated: (1) A somewhat higher yield than from hand-breaking operations; (2) lower operating cost where volume justifies; (3) a product with a more uniform and no higher bacterial level; (4) a product with consistently lower total solids; (5) a product with unimpaired functional properties as determined by baking tests.

Studies in cooperation with 10 Midwest egg plants showed that sampling liquid eggs at the churn is a satisfactory way to obtain

samples of egg product for rapid quality analysis, and should prove practical in quality-improving programs. Churn samples showed less variation than drilled samples and were as satisfactory as drilled samples in determining total solids, fat, and color and meringue test values. Sampling at the churn is easier, requires less labor, costs less, and the laboratory results from it may be obtained at least 72 hours earlier than the other method of sampling.

The relation of changes in shell egg quality under both refrigerated and nonrefrigerated conditions at the farm, in wholesale channels, and at the retail level to speed of movement to market and marketing costs were investigated under contract arrangements with Washington State College. Preliminary results indicate that refrigeration in marketing channels is desirable throughout the year, whereas refrigeration on the farm is justified during the warm months of the year. Once-a-week pickup of eggs from the farm was more economical than twice-a-week pickup during all seasons of the year.

A study made in cooperation with the University of Rhode Island on purchases of eggs by 300 homemakers in Providence, R. I., is nearing completion. Independent grocers and chain stores supplied the eggs used by 39 percent of the families; eggs supplied directly by farmers, either at the farm or at the door, accounted for 27 percent, whereas the remaining 34 percent were supplied by a variety of other sources including peddlers, poultry markets, and dairy routes. Although more than 90 percent of the consumers purchased all their eggs from one source throughout the year, more than half of them did not purchase eggs where they purchased their groceries. Freshness and quality were the reasons given most often for their choice of a supplier. High-income families appeared more quality conscious than those of low income. Over three-fourths of the consumers selected the AA or A egg as best from a colored display of four eggs of AA, A, B, and C grade. About the same proportion chose the C egg as poorest. Less than 30 percent of the housewives registered complaints about recent egg purchases. For those who did, complaints of blood and meat spots were most common. Approximately one-third of the eggs bought as grade A were found to be below the United States grade standard, as determined in the home. Farmers and peddlers had the highest proportion of dozens meeting quality standards.

Research with the Pennsylvania State College was initiated under contract to determine appropriate sampling procedures for grading eggs. Preliminary results of this study indicate that eggs in the same case packed little end up grade significantly lower than eggs packed big end up.

In cooperation with Cornell University, extensive research was conducted to evaluate egg merchandising practices, consumer buying habits and preferences, and their influence on egg sales. Under controlled-store conditions, grade AA eggs were sold at varying premiums above the price of grade A eggs. Results indicate that a 5-cents-per-dozen premium appeared feasible. A model case, developed for use in experiments, brought about an 8-percent increase in egg sales that seemed due solely to the appeal for eggs created by the display case, since, when the case was not used, sales decreased to the previous level. Such cases are now being manufactured commercially.

In a study of 176 egg routes in 10 Midwestern States, it was found that about 8 hours per route were required for all operations involved in assembling eggs. About 11 percent of this time was spent in loading and unloading the trucks; 41 percent was required for driving; 36 percent was spent at stops where eggs and other products were collected; and the remaining 12 percent was spent at stops where no eggs or other products were collected. The estimated cost of procurement on the most efficient group of routes was 38 cents per 100 pounds of product picked up, whereas it was \$1.56 for the least efficient group. The most efficient routes required only one-fourth as much time and travel per unit of product as did the least efficient group.

Poultry Marketing Research

An analysis was made and a report completed on poultry plant sanitation practices. When liberal quantities of inplant chlorinated processing water at 10 to 20 parts per million was used during the processing operations, when mechanical washing was used in the last operation in the evisceration line, and when sufficient chlorinated water was used to keep equipment clean, sanitation in poultry processing plants was good. Chemical dipping of birds holds promise, but chlorinated snow was found no more effective than plain snow ice for this purpose.

A comprehensive analysis of trends in the poultry industry is nearing completion. This work is being done at the request of the North Central Regional Poultry Research Committee and in cooperation with other Federal agencies. It will show geographical changes in concentration in production, shifts in the surplus-deficit position of various areas, market flow, geography of prices, seasonality of storage, and other factors.

In cooperation with the North Central Regional Poultry Marketing Committee, assistance has been given in analyzing the data obtained in an extensive survey made by State representatives on the marketing methods of 10,000 producers and 2,500 first receivers of poultry and eggs.

Retailer Training

The Poultry and Egg National Board, under contract arrangements with PMA, continued to conduct schools to acquaint eligible trainees with the most effective techniques for merchandising poultry products. During the year, 259 classes were held. More than 16,000 persons in 32 States have participated in these classes since January 1, 1951. An appraisal of this program was conducted under contracts with the University of Missouri and the University of Maryland. Marked improvement in sales of chicken and eggs occurred in those stores in which merchandising practices, taught in the training schools, were adopted. In isolated instances, as much as a 400-percent increase in sales of fryers was reported from stores whose personnel attended the classes.

Market News

In June 1952, a report on weekly egg and live poultry receipts at primary markets in the Central West was discontinued. To ascertain in what respects the report might be improved to meet the needs of the poultry industry, information was compiled each week, under test conditions, during the past year.

One improvement stressed was that of obtaining and reporting receipts of commercial broilers separately from farm-raised young stock. It appears that information obtained from plants under the grading, sanitation, and inspection service would provide accurate United States coverage. Also, placing the report on a regional basis would aid in making a more meaningful and reliable report for the industry.

Research on ways and means of improving market news on broiler prices in the North Carolina and Shenandoah Valley areas is discussed on page 87.

SUGAR

PMA's sugar programs are authorized by the Sugar Act of 1948, the Commodity Credit Corporation Charter Act, and the Agricultural Marketing Act of 1946.

The Sugar Act program aims to provide domestic household and industrial consumers with adequate supplies of sugar at reasonable prices which will, at the same time, fairly and equitably maintain and protect the welfare of the domestic sugar industry. The attainment of this objective involves: (1) The determination of the total sugar requirements of consumers each year; (2) administration of quotas to regulate the entry of sugar into the continental United States from offshore areas and the marketing of sugar by continental areas; and (3) payments to domestic producers of sugarcane and sugar beets who do not market in excess of specified quantities, who meet certain standards with respect to child labor, who pay wages deemed to be fair under the standards established by the act, and (in the cases of processor-producers) who pay other producers for sugarcane and sugar beets, prices that are determined by the Secretary to be fair and reasonable.

Under the CCC Charter Act, sugar is procured by the CCC under special and emergency conditions and for other Government agencies. Under the Agricultural Marketing Act of 1946, research is conducted on the marketing of sugar and related products. Other program activities relating to sugar and related products involve the collection and dissemination of market news and grading, inspection, and standardization work.

Prices, Consumption Requirements, and Quotas

The wholesale price of refined sugar on July 1, 1952, was 8.80 cents per pound. During the fiscal year the price declined to 8.50 cents, but before June 30, 1953, had increased to 8.75 cents. These prices followed the seasonal changes in the price of raw sugar duty paid, New York, which ranged between 5.95 and 6.65 cents per pound. For the fiscal year the wholesale price of refined sugar averaged 8.72 cents per pound as compared with 8.44 cents for the previous year, and the price of raw sugar duty paid, New York, averaged 6.34 cents per pound as compared with 6.06 cents. The monthly average price of raw sugar for sale in the world market ranged between 4.16 cents per pound in July 1952 and 3.27 cents in March 1953.

Sugar requirements for 1952 were increased on October 24, 1952, from 7,700,000 short tons, raw value, to 7,800,000 tons and, on November 29, to 7,900,000 tons. On December 10, 1952, sugar requirements for 1953 were determined to be 7,800,000 tons, 400,000 tons less than the quotas would have been had not a price stimulus been needed.

This allowance for price stimulus was lessened in April 1953 as the sugar requirements level was raised to 7,900,000 tons.

During the fiscal year the following deficits were declared in the 1952 quotas: Beet area, 240,000 tons; Hawaii, 80,000 tons; and the Philippines, 200,000 tons. Final adjusted quotas for 1952 and quotas in effect on June 30, 1953, are shown in table 5.

To assure orderly marketing, the 1952 and 1953 quotas for Puerto Rico were allotted to individual processors. This was necessary because stocks at the beginning of each year plus production of sugar during the year greatly exceeded the mainland and local quotas.

On June 8, 1953, it was announced that it would be necessary to allot the 1953 quota for the mainland cane area because of the unusually large carryover of 1952-crop sugar and prospects of a large 1953 crop. A hearing was held on June 23, at New Orleans, La., to discuss the proposed method of allotment.

TABLE 5.—*Sugar quotas, by production areas, calendar years 1952 and 1953*

Production area	1952 quota, final		1953 quota, as of June 30
	Basic	Adjusted	
	<i>Short tons, raw value</i>	<i>Short tons, raw value</i>	<i>Short tons, raw value</i>
Domestic beet sugar.....	1, 800, 000	1, 560, 000	1, 800, 000
Mainland cane sugar.....	500, 000	533, 296	500, 000
Hawaii.....	1, 052, 000	972, 000	1, 052, 000
Puerto Rico.....	910, 000	982, 860	1, 080, 000
Virgin Islands.....	6, 000	6, 400	12, 000
Philippines.....	974, 000	774, 000	974, 000
Cuba.....	2, 621, 851	3, 025, 295	2, 382, 720
Other foreign countries.....	36, 149	46, 149	99, 280
Total.....	7, 900, 000	7, 900, 000	7, 900, 000

Wage and Price Determinations

Determinations of fair and reasonable wage rates were issued for each of the five domestic sugar-producing areas.

In Florida, basic time rates for all classes of workers were increased 5 cents per hour. However, actual earnings per hour of workers are higher than established minimums because a considerable part of the work is done on a piecework basis and most employees who are paid hourly rates receive wages exceeding the minimums established. In Louisiana the wage differential between adult male and female workers was eliminated and wage classifications were consolidated. Also production and cultivation minimum wage rates and basic time wage rates for harvesting were increased approximately 5 percent.

For California and contiguous areas, basic time rates were increased 5 cents per hour. Specific piecework rates have not been provided for these regions for several years, but where they are used the earnings of workers so employed must be not less than the applicable minimum hourly rates provided for work performed on a time basis. No change was made in the determination of wage rates covering the remainder of the sugar-beet area except that a rate was provided for first hoeing of fields which had been completely machine thinned.

In Puerto Rico, basic wage rates were raised 5 cents per day and the amount of the wage increase in the wage-price escalator was raised from 5 cents per 8-hour day to 6 cents for each 10-cent, or fraction thereof, increase in the 2-week average price of raw sugar above \$5 per 100 pounds. The effect of this action was to increase wage rates by about 6 percent.

The wage determination for the Virgin Islands increased basic minimum wage rates for the several classes of workers 10 to 15 cents per hour above 1952 rates. For handicapped workers whose productive capacity is impaired by age, physical, or mental deficiency the basic minimum hourly rates may be reduced not more than one-third. The wage rates provided for the Virgin Islands were the same as those prescribed in the minimum wage scale ordinance issued by the local municipal council in 1952.

No change was made in the basic wage provisions of the determination for Hawaii, which requires payment of wages as agreed on. Collective bargaining agreements, which affect the majority of workers and are binding on both parties by provisions of the determination, established a minimum wage of \$1.02 per hour effective during most of 1953 on the majority of plantations, somewhat higher minimums at three plantations, and a somewhat lower wage scale for 4 plantations which includes, however, a wage-price escalator provision.

During the fiscal year, fair price determinations were issued for all domestic sugar-producing areas. In Florida, the basic price per ton of standard sugarcane was reduced from \$1.10 to \$1.07 for each 1 cent per pound of the average price of raw sugar and the point at which processors assumed transportation costs of sugarcane was standardized. In Puerto Rico, basic minimum price requirements were not altered significantly but the determination provided a single 12-month pricing period basis for the producer's entire share of raw sugar except for that sold under programs involving the use of foreign aid funds of the United States Government, in which case the actual price received became the pricing basis. In the Virgin Islands determination, minimum price requirements were not changed but simplified methods of settling for grower sugarcane were provided. In Hawaii, no change was made in the basic pricing requirements but processors were permitted to deduct a fixed charge for services rendered independent growers which previously was not recovered by processors. No changes were made in the fair price determination for the sugar-beet area.

The field work for a study of costs, returns, profits, and related data for the production of the 1951-crop sugar beets and the processing of beets for the four crops 1949-52, which commenced in March 1952, was completed. A survey of labor performance in the sugar-beet area for the 1953 crop was initiated at the time thinning operations started in May. In June 1953 work began on a study of the costs, returns, profits, and related data pertaining to Hawaiian plantation operations for the 1949-52 crops as well as of adherent planter and independent grower operations for the 1952 crop.

Payments to Growers

Pursuant to the operation of title III of the Sugar Act of 1948, conditional payments totaling slightly more than \$63,000,000 were

made to about 66,000 sugar-beet and sugarcane producers in 24 States, Hawaii, Puerto Rico, and the Virgin Islands with respect to the crop year 1952. These producers qualified for payments by meeting the standards specified in the Sugar Act with respect to child labor, wage rates, proportionate shares, and in the case of processor-producers, payment of fair and reasonable prices. Included in these payments were about \$1,000,000 to producers for abandonment of acreage and deficiencies in yields resulting from causes specified in the act.

Sugar production in 1952 exceeded 1951 levels in all domestic areas except the sugar-beet area. That area produced about 1,532,000 tons compared with 1,540,000 tons in 1951. Production in Hawaii increased from 996,000 tons to 1,020,000 tons, and in the mainland cane area from 419,000 tons to 607,000 tons, from the 1951 and 1952 crops, respectively. Puerto Rico's 1951-52 crop production reached the record level of 1,372,000 tons following its 1950-51 crop production of 1,238,000 tons, and production in the Virgin Islands rose to 12,000 tons from 7,568 tons in 1951.

Proportionate shares for sugar-beet and sugarcane farms in the domestic producing areas must be established for each crop, since marketing within such shares constitutes one of the conditions for payment under the act. A determination was issued on March 25, 1953, permitting unlimited marketings from the 1953 crops in the mainland beet and cane-sugar areas, Hawaii, and the Virgin Islands, as it appeared unlikely that production in such areas would exceed their statutory quotas in amounts sufficiently large to result in abnormal carryover stocks. In Puerto Rico, however, estimated carryover stocks into 1953, plus prospective production from the area's 1952-53 crop, pointed to a total sugar supply substantially in excess of the area's 1953 quota and carryover requirements. Consequently, a determination was issued on July 17, 1952, establishing restrictive proportionate shares on the 1952-53 crop and prescribing methods of determining farm bases for all producers of sugarcane in Puerto Rico. A subsequent determination, issued on December 31, 1952, provided an adjustment factor (applicable to farm bases) which was designed to effect a total production of 1,190,000 tons, equivalent to Puerto Rico's local and mainland marketing quotas for 1953.

In the mainland cane area, record, and prospective near record, sugar production from the 1952 and 1953 crops, respectively, made proportionate share restrictions appear mandatory on the area's 1954 crop to keep production in line with marketing quotas. On June 24, 1953, an informal hearing was held in New Orleans, La., to obtain the views of all interested parties as to the mechanics of applying 1954 crop restrictions.

Intensive work was continued during the year to promote more effective enforcement of the child labor and wage rate provisions of the Sugar Act and to otherwise improve the overall operation of the conditional payment program.

The estimated total payments to be made to producers in the several domestic sugar-producing areas, the part of these payments that relates to acreage abandonment and crop deficiencies, and the number of payees for the 1951 and 1952 crop years are shown in table 6.

TABLE 6.—*Payments under the Sugar Act of 1948 and number of payees, in the domestic sugar-producing areas, crop years 1951 and 1952*¹

Payment and payee	Domestic beet sugar area	Mainland cane sugar area	Hawaii	Puerto Rico ²	Virgin Islands	Total
	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>
Payments on sugar beets or sugar cane:						
1951-----	25,039,785	5,749,600	9,143,000	16,980,900	98,000	57,011,285
1952-----	24,633,495	8,965,000	9,440,000	18,900,000	166,000	62,104,495
Abandonment and deficiency payments:						
1951-----	880,000	718,400	-----	172,100	-----	1,770,500
1952-----	794,505	100,000	-----	100,000	-----	994,505
Total payments:						
1951-----	25,919,785	6,468,000	9,143,000	17,153,000	98,000	58,781,785
1952-----	26,428,000	9,065,000	9,440,000	19,000,000	166,000	63,099,000
Payees:	<i>Number</i>	<i>Number</i>	<i>Number</i>	<i>Number</i>	<i>Number</i>	<i>Number</i>
1951-----	41,439	8,781	1,199	17,034	511	68,964
1952-----	37,372	9,026	1,199	18,000	511	66,108

¹ Preliminary.² 1950-51 and 1951-52 crops.

Sugar Purchases

During the fiscal year, CCC purchased about 66,700 short tons of sugar. Of this quantity, approximately 1,550 tons of white crystals were purchased from Taiwan at a price of 5.35 cents per pound, c. and f. Iranian port, to complete a Technical Cooperation Administration program. In January 1953, CCC also purchased 9,925 short tons of refined sugar made from Puerto Rican overquota raw sugar at a price of 5.734 cents per pound f. a. s. Puerto Rico, for shipment to Iran under a TCA program.

Under a Mutual Security Agency program, CCC purchased for shipment to Greece a total of approximately 55,200 short tons of refined sugar made from Puerto Rican overquota raw sugar. The prices paid for this quantity ranged from 5.797 cents to 6.025 cents per pound f. a. s. port of shipment. A price of 4.55 cents per pound for the raw sugar f. o. b. raw mill, was negotiated as a basis for the purchase of 8,800 tons of refined sugar at a price of 5.797 cents per pound. For the balance of 46,400 tons, the raw sugar price was negotiated at a basis of 4.70 cents per pound f. o. b. raw mill, which resulted in refined sugar prices ranging from 5.86 cents to 6.025 cents per pound f. a. s. port of shipment. The Greek Government arranged for the shipment of the sugar, part of which will be shipped in July and August 1953.

Program Research

Economic and statistical studies were made of world and of United States production, stocks, distribution, consumption, and prices of sugar and of the effect of various economic factors on the demand for and price of sugar. Quarterly data on stocks were obtained and analyzed in order to appraise the effect of stock levels on sugar distribution and the consequent effect on the consumption estimate and quotas. Other periodic surveys were made to obtain needed information on production, movement, and disappearance of sugar. The data obtained from such surveys were analyzed to provide information required in administering title II of the Sugar Act. As a byproduct of such surveys and analyses, statistics were made available to the trade with respect to: Weekly distribution of sugar by cane-sugar refiners, beet-sugar processors, importers of direct-consumption sugar, and mainland cane mills. Similar distribution data, as well as information on stocks, receipts, and production, were released monthly. Released also were reports showing the quantity of sugar delivered in each State each month. Quarterly data were obtained, analyzed, and released with respect to the quantity of sugar and dextrose distributed to each type of sugar buyer such as wholesaler, retailer, baker, confectioner, and soft-drink bottler. Data also were obtained and released relating to the quantity of sugar delivered in packages of less than 100 pounds, thereby giving an indication of the quantity of sugar going into household use each quarter.

Analyses of selected data and information obtained for program purposes were summarized and published in a periodical entitled "Sugar Reports." In addition, two special reports were prepared. One, entitled "Sugar Statistics, Volume I," and dated June 1953, brought together data accumulated in the administration of the sugar acts beginning with the Jones-Costigan Act of 1934 and related infor-

mation. (In process is vol. II dealing primarily with the domestic sugar-producing areas.) The second special report, entitled "The United States Sugar Program" (AIB-III), is now in press. It describes the background, operation, and results of the sugar programs.

International Sugar Agreement

In September 1952, official representatives of the United States and 30 other major producing and consuming countries met in London under the auspices of the International Sugar Council to consider further the possibility of developing a new International Sugar Agreement. Such an agreement would replace the 1937 agreement, the operative provisions of which have been in suspension since early in World War II. At this meeting, further study was devoted to general conditions in the world sugar market and to a simplified draft agreement which had been developed by a special committee of the Council and originally presented for consideration at a meeting in London, in March 1952. Objectives set forth in the draft agreement are to assure sugar supplies to importing countries at equitable and stable prices, to increase world consumption, and to maintain purchasing power of those countries whose economies depend largely on sugar exports. The draft agreement places emphasis on the promotion of increased consumption of sugar, reduction of trade barriers, and some restriction on the expansion of sugar production in protected markets.

Since world sugar surpluses were closely approaching a critical level, and the discussions of the simplified draft agreement had progressed to a point where it was felt that the draft would serve as a sound basis for negotiation, the conferees at the September meeting recommended to the Council that the United Nations be asked to call a conference of its member nations to consider the practicability of a new agreement. As a consequence, the United Nations called a conference to begin July 13, 1953, in London, at which the United States will be represented.

The United States, as a member of the International Sugar Council and of the special committee of the Council named to study conditions in the world sugar market and develop a basis for a new agreement, has actively participated in all developments leading up to this conference. This country has an important interest in any new international sugar agreement, in that its specific provisions could have considerable influence on our international trade, on the economic and political stability of our major foreign suppliers of sugar, on the future trend of sugar production in domestic areas, and on the effective administration of domestic sugar legislation.

Inspection, Grading, and Standardization

Standards for edible molasses were issued. Demonstration work was initiated to acquaint users, producers, and distributors with such standards and was continued for sugarcane sirup and refiners' sirup standards. Work was continued to ascertain possible changes in inspection and grading services to improve their practicability in commercial use. Inspection services costs proved to be higher than anticipated and it was necessary to prepare revised schedules of charges.

Development of liquid sugar standards continued. In January 1953, producers met with PMA representatives to discuss proposed liquid sugar grades and it was decided that further development work in the fields of color, total sugars, and total solids determinations, was required to produce acceptable analytical methods for the standards. Additional testing was planned and will be conducted in the late summer. A similar meeting with producers and industrial consumers of liquid sugar is planned in the fiscal year 1954 to discuss the proposed standards and obtain additional suggestions for improving their accuracy and workability in commercial practice.

Visual color comparators for color determination of molasses, sugar-cane sirup, and refiners' sirup were developed and will be made available to the trade for use in color standards. They will permit direct comparison of sirup samples with a series of three color standard solutions by visual inspection of the light transmitted.

Interest has been increased among the various segments of the industrial molasses trade in the development of standards for industrial molasses. The necessary background data on this subject are being assembled and work on standards on the commodity will probably begin in the fiscal year 1954.

Market News

The Weekly Molasses Market News Report, now 2 years old, is issued each Wednesday. It represents the first source of molasses market information disseminated widely to all segments of the trade, including producers, distributors, and users. The report covers price, supply, and demand conditions for cane blackstrap molasses, beet molasses, citrus molasses, and hydrol. For cane blackstrap, which constitutes the bulk of molasses marketed, coverage is extended to three market levels, including: (1) Producer markets in Louisiana, Florida, and Puerto Rico; (2) port terminal markets in New York City, New Orleans, Baltimore, Philadelphia, Boston, Albany, Houston, west coast points, and several other markets of lesser importance; and (3) the major consuming centers of Chicago, St. Louis, Minneapolis, Denver, Memphis, and Cincinnati. Beet molasses market information is reported for major production areas and consuming centers. In addition, conditions in foreign markets, imports, and import prices are included in the weekly report as data become available. Information also is continually collected and reported on related market conditions, such as ethyl alcohol, yeast, and citric acid, which affect the molasses market.

The inclusion of Puerto Rican producer prices, representing an addition to market coverage during the year, provides information of more direct value to Puerto Rican producers in their bargaining with local distributors and United States and foreign buyers. Work was begun during the year to initiate reporting of United States producers' and distributors' stocks and disposition of molasses but the year ended before final methodology for such reporting could be completed.

Supplementing the weekly report, two comprehensive reports of molasses market conditions were published in Sugar Reports. These reports analyzed the effect of various market developments during the year and provided summaries of available statistical information.

Marketing Research

A study to determine the feasibility of expanding distribution of liquid sugar and the extent of the potential market for this product was completed during the year and a report, *Marketing Liquid Sugar (MRR-52)*, was prepared for publication. It was found that the advantages of liquid sugar usage to many industrial sugar users far outweigh the disadvantages. In-plant handling and usage savings average \$2.91 per ton over dry bagged sugar. Producers' costs are reduced also because bag handling and packaging are eliminated. Liquid sugar cannot totally replace dry sugar in industrial use because it is not adaptable to all processes; some manufacturing plants are too small to receive liquid sugar economically in bulk lots; and other plants are so far removed from sources of supply that savings are offset by added freight on the water content of liquid sugar. However, it is estimated that a potential market over twice the size of that presently developed is available for liquid sugar, which now constitutes about 21 percent of total industrial sugar usage.

In Louisiana, work was continued to determine means of improving the quality of sugarcane marketed by producers since, in that State, the problem of marketing low quality cane as well as the consequent low sugar recoveries from this product and the processing difficulties encountered with it is most acute. This work involves a determination of the added commercial value of clean, properly topped cane as compared with topping of trashy cane as well as a determination of the cost of extra cleaning operations. A report of findings and recommendations will be published.

Progress was made in determining reasons for the decline in volume and value of sugarcane sirup and edible molasses production and the improvements that can be made in marketing practices and methods to stimulate demand, regain lost markets, and thereby improve the financial condition of this industry. A report was being prepared at the end of the year.

A project was initiated to evaluate the potential market for sugarcane bagasse, a byproduct, the commercial use of which now appears promising. Market research was undertaken to develop reliable information on such factors as size and location of possible markets, availability and cost of competing raw materials, and on bagasse assembly and usage costs, to serve as a basis for decisions by private firms as to whether to invest capital in commercial size ventures.

Special attention was given to aggravated marketing conditions for industrial molasses, since prices had fallen from their high level of 35 cents a gallon at New Orleans in 1951 to 9 cents in October of 1952. The Department sponsored a public meeting in November 1952 of producers, distributors, and users to discuss marketing problems and possible solutions. The consensus was that supplies exceed the presently developed capacities of the various market outlets, that feed usage offers the best potential for increasing total utilization, and that to increase feed utilization to desired levels would require improved distribution facilities and methods, the development of more usable forms of molasses for particular needs, and increased educational, service, and research activities. An issue of *Sugar Reports* on molasses, summarizing these discussions, was published and made available to public and private research and service organizations, as

well as to members of the industry. Research also was begun late in the year to determine the possibilities of improving distribution facilities and lowering marketing costs, and also to determine the place and market potentials for dried high-content molasses products. In addition, an information pamphlet, *Feeding Molasses to Livestock*, which is based largely on information gathered under the molasses market news program and marketing research conducted by PMA, was prepared for publication.

Preliminary work was also begun to develop methodology for conducting a comprehensive study of raw sugar marketing problems.

Export Controls

Export controls over sugar and inedible molasses were removed on July 24, 1952.

TOBACCO

Tobacco production in 1952 totaled 2,254,855,000 pounds as compared with the 1942-51 average production of 1,948,844,000 pounds. Prices of the major types were supported throughout the fiscal year at no net loss to the Commodity Credit Corporation. Federal inspection and market news services were available free of charge to producers on all tobacco sold at auction. Marketing quotas were in effect on the principal types of tobacco, accounting for more than 93 percent of total United States production.

Price Support

Price support was made available to growers of 1952-crop United States and Puerto Rican tobacco through 13 cooperative associations of growers operating under agreements with CCC. Loans on 369,728,000 pounds of 1952-crop tobacco totaled \$159,656,000 during the fiscal year. About 16 percent of the 1952 crop was placed under loan as compared with 11 percent of the 1951 crop.

The accompanying tabulation shows the kinds of tobacco supported, the mandatory support level, and the cents-per-pound average loan level:

Kind of tobacco:	Mandatory support level ¹ (percent of parity)	1952 crop support level ¹ (cents per pound)
Flue-cured 11-14.....	90	50.6
Fire-cured 21-23.....	² 75	37.1
Burley 31.....	90	49.5
Dark air-cured 35-37.....	² 66 $\frac{2}{3}$	33.0
Puerto Rican filler 46.....	90	33.1

¹ Price-support legislation provides that support levels shall be the higher of (1) minimum levels announced before planting time or (2) 90 percent of parity as of the beginning of the marketing year. Minimum level announced for the 1952 crop was slightly higher than 90 percent of parity as of the beginning of the marketing year.

² Percentage of burley rate.

Adjustment Operations

During the 1953 fiscal year six tobacco marketing quota referendums were held. The dates of each referendum and the crop years for which quotas were approved (or disapproved) are as follows:

Kind of tobacco:	Date held	Crops for which quotas were approved
Flue-cured	July 19, 1952	1953, 1954, and 1955.
Maryland	Oct. 29, 1952	1953.
Cigar filler and binder (42-55)	do	1953.
Cigar filler (41)	do	Quotas disapproved.
Burley	Nov. 22, 1952	1953, 1954, and 1955.
Virginia sun-cured	do	1953, 1954, and 1955

Tobacco marketing quotas were in effect for the 1952 crops of burley, flue-cured, fire-cured, dark air-cured, and Virginia sun-cured tobaccos.

Tobacco marketing quotas are in effect only when approved by at least two-thirds of the growers voting in a referendum. Quotas were approved by growers for the 1953 crops of burley, flue-cured, fire-cured, dark air-cured, Virginia sun-cured, Maryland, and cigar filler and binder (types 42-55).

The amount of the 1953 quota and the total acreage allotted to individual old and new farms, follow:

Kind of tobacco:	National quota (pounds)	Acreage allotments (acres)
Burley	546, 000, 000	432, 637
Flue-cured	1, 294, 000, 000	1, 044, 597
Fire-cured	65, 300, 000	57, 122
Dark air-cured	29, 800, 000	26, 506
Virginia sun-cured	4, 854, 000	4, 941
Maryland	42, 000, 000	55, 800
Cigar filler and binder (42-55)	77, 000, 000	49, 247
Total	2, 058, 954, 000	1, 670, 850

Marketing Agreement and Order

The marketing agreement and order program covering shade-grown cigar-leaf (type 62) tobacco, which became effective June 3, 1952, was continued.

Inspection

Inspection service was maintained on all established auction markets—a total of 170—as follows: Flue-Cured, class 1, types 11, 12, 13, and 14—88 markets; Fire-Cured, class 2, types 21, 22, and 23—10; burley, class 3 (a), type 31—58; Maryland, class 3 (a), type 32—4; and Dark Air-Cured, class 3 (b), types 35, 36, and 37—10. The volume of tobacco inspected totaled about 2,323,000,000 pounds—100 percent of all tobacco sold at auction. In addition, approximately 368,245,000 pounds of tobacco in hogsheads were inspected under cooperative agreements with 11 marketing associations in the auction areas. A total of 1,733,190 pounds of cigar leaf (Puerto Rican) was inspected under cooperative agreements with 2 marketing associations in Puerto Rico.

Technical Assistance and Training Activities

Proper techniques of preparing tobacco for market were demonstrated to 64,000 tobacco growers. These demonstrations were conducted in cooperation with the Extension Service and vocational education agencies and with civic and farm organizations.

Ten training and refresher courses were conducted for inspectors to improve and promote uniform application of standards for grade.

Five short courses in tobacco standards and specifications, as well as in preparation of tobacco for market, were held at State colleges. Four courses in tobacco standards and specifications were held for members of the trade.

Market News

Market news was furnished to all auction markets. The service was provided for 13 types at 941 warehouses located on 170 markets in 12 States. A total of 1,113 different reports (daily, weekly, and seasonal) were prepared, and 1,147,112 copies distributed. About 80 percent of these were furnished directly to growers for use at the time their tobacco was offered for sale; the others, distributed largely by mail, went to newspapers, radio stations, members of the trade, and numerous other persons and agencies.

Four market reviews—comprehensive compilations of market, price, and related information—were issued at the close of the season for the 4 classes of tobacco, and 8,590 copies were distributed.

Market news releases were furnished from 2 permanent offices at Raleigh, N. C., and Lexington, Ky., and from 9 temporary offices set up at points in the various belts. The annual market reviews were prepared in Washington.

Cooperative agreements covering market news were continued with the State departments of agriculture in North Carolina, Virginia, Tennessee, Kentucky, West Virginia, and Maryland.

Tobacco Stocks

The Tobacco Stocks and Standards Act of 1929 requires that quarterly reports be made of stocks of leaf tobacco owned by dealers and manufacturers. This information, released in the Tobacco Stocks Reports, is based on schedules received from about 1,000 dealers and manufacturers in the United States and Puerto Rico.

The Annual Report on Tobacco Statistics for 1952, also required by the Tobacco Stocks and Standards Act, was released in December 1952. This publication is a compilation of the most frequently used statistics relating to tobacco.

Standardization Activities

A revision of the Official Standard Grades for Burley Tobacco, Type 31, was prepared for the Secretary's approval. The Proposed Official Standard Grades for Maryland Tobacco, Type 32, were revised and brought up to date pending final promulgation. Studies were made in the application of the revised official standards for flue-cured tobacco, particularly with respect to types 11 (a) and 11 (b) to determine the possible need for further revision. Preliminary studies were made in cigar-binder tobacco of types 53, 54, and 55, with the view of revising these standards.

Activities Under the Agricultural Marketing Act

Coordinated research organized during the last fiscal year and known as the Tobacco Research Pool is now functioning. State research organizations of Connecticut, Kentucky, Maryland, North

Carolina, Pennsylvania, and Tennessee are participating. In addition, 14 universities and tobacco companies are making their contribution to this cooperative effort. The program is being coordinated by PMA, in cooperation with the Bureau of Plant Industry, Soils, and Agricultural Engineering and the Bureau of Agricultural and Industrial Chemistry. Selection of samples representing a cross-section of the 1951 crop of burley tobacco, type 31, was completed and the samples were distributed to the cooperating laboratories. Physical and chemical data relating to these samples are now being assembled. The following determinations have already been completed: Moisture, sand, total ash, total volatile acids, formic and acetic acids, total alkaloids, proteins, Hunter color measurements, pH, and moisture equilibrium.

Cooperative research is being expanded to include type 11, flue-cured tobacco grown in the Old and Middle Belts of Virginia and North Carolina. Samples representing a cross-section of this type were collected from 28 markets, resorted, and prepared for research. These samples were reviewed by a group of Federal supervisors, as well as officials of the cooperating laboratories, and will be distributed for physical and chemical investigations early in the 1954 fiscal year.

Samples representing a cross-section of the 1952 crop of type 31, also were collected on 44 burley markets, and preliminary work has been done in preparing these samples for cooperative research.

Cold-storage facilities have been expanded and improved to permit the storage of all samples prepared for use in standardization, research, training, demonstration, and educational work. Progress has been made in training individuals to appraise the different elements of quality in tobacco according to numerical degrees of quality. A machine known as the Diamond Blender has been developed by a member of the staff and successfully used in blending samples distributed for cooperative research investigations.

Two articles on the chemical composition of flue-cured tobacco were published: *The Content of Uronic Acids in Several Grades of Flue-Cured, Type 12, Tobacco*, and *The Chemical Composition of Certain Grades of Type 11, American Flue-Cured Tobacco—Relationship of Composition to Grade Characteristics*.

Studies on the chemical composition of 21 grades and the stems of 3 grades of the 1951 crop of burley tobacco, type 31, were begun.

For the last few years, a study of the auction marketing of flue-cured tobacco has been under way. Volume of sales in relation to efficiency of operation and overexpansion of marketing facilities as they affect marketing costs were given special consideration in the development and prosecution of the project. The preliminary evaluation was completed during the past year, and a report covering the findings is in preparation.

NAVAL STORES

Overall production of gum and wood turpentine and rosin during the crop year ended March 31, 1953, declined 17 and 16 percent, respectively. This decline was offset by increased carryover stocks and reduced disappearance, particularly exports. Price support was available to gum producers throughout the fiscal year.

Three lines of marketing activity were carried on under the Naval Stores Act of 1923: (1) Inspection of naval stores including all tur-

pentine and rosin pledged to CCC loans; (2) establishment and maintenance of standards; and (3) regulation of naval stores in interstate commerce to prevent adulteration, mislabeling, short weights, and other malpractices.

Price Support

During the fiscal year 1953, both the 1952 and 1953 gum naval stores loan programs were in operation. Loans were available to producers through the American Turpentine Farmers Association Cooperative, Valdosta, Ga., operating under an agreement with CCC.

The following tabulation shows the support rates:

Commodity and unit:	Support rates	
	1952 (dollars)	1953 (dollars)
Gum naval stores production unit ¹ -----	129.72	129.81
Gum turpentine (1 gal. bulk)-----	.50	.50
Gum rosin (100 lb. net in drums):		
(Grades X-WG)-----	7.48	7.49
(Grades N-I)-----	---	7.39

¹ 50 gallons of turpentine and 1,400 pounds of rosin.

Under the 1953 program grades G and H (of which little is produced) were dropped from the loan schedule and a differential of 10 cents per 100 pounds was established between the pale and medium grades of rosin.

Loans under the 1952 program were made on 54,114 (50-gal.) barrels of turpentine and 316,761 (517-lb.) drums of rosin, aggregating in value \$13,808,000. About 39 percent of the turpentine and 11 percent of the rosin were redeemed. These pledges approximated about 24 percent of the gum turpentine and 48 percent of the gum rosin crop, compared with 2 and 6 percent, respectively, under the 1951 program.

Through June 30, 1953, loans under the 1953 program were made on 6,467 barrels of turpentine and 39,490 drums of rosin, valued at about \$1,663,000. These quantities approximate 37 percent and 45 percent of turpentine and rosin loans under the 1952 program at the same time last year.

There were no liquidations of CCC-acquired stocks, which on June 30 aggregated 10,493 barrels of turpentine and 318,551 drums of rosin.

Market News

Market news information continued to be available from Savannah, Ga. The service covered export and domestic sales of gum rosin and gum turpentine in all except small (retail) containers.

A total of 320 reports (daily, weekly, monthly, and annual) were prepared and 146,700 copies distributed to producers, processors, dealers, exporters, consumers, foreign importers, and others. Also, reports were disseminated daily by CND wire, by newspapers and trade magazines, and by 15 radio stations. Sales information was provided by most of the major sellers of gum turpentine and rosin.

Inspection

Inspection and certification of rosin covered the equivalent of 551,416 (517-lb.) drums. The reduction of 61,028 drum equivalents below 1952 is explained by a 16-percent reduction in rosin output.

A total of 1,718 inspection and grading certificates were issued covering rosin—56 more than in 1952.

Turpentine inspections totaled 6,987,300 gallons, of which gum turpentine constituted 85 percent; steam distilled wood turpentine, 10 percent; and sulfate wood turpentine, 5 percent. This quantity was 1,890,000 gallons under 1952. The decrease was due to less production and reduced exports. A total of 964 turpentine inspection certificates were issued—an increase of 124 over last year. Inspections included turpentine shipped in commercial containers under cooperative inspection agreements, in drums, tank cars, tank steamers, and turpentine in storage tanks at processing plants.

In addition 1,151 lots of rosin (totaling 306,485 drums) previously inspected and certified by Federal inspectors at initial delivery points were recertified under loan and sale certificates. Similar recertifications were issued on 4 tank cars of rosin.

Licensed inspection of turpentine and rosin under Federal supervision was conducted at 30 accredited processing plants. Inspection and certification of turpentine packed in small retail containers was done at 19 packing plants under cooperative inspection agreements.

The inspection service was reorganized in November 1952 when 4 inspection regions were established in the producing territory, to each of which was assigned a regional supervising inspector, who is responsible for checking and reviewing the work of licensed inspectors at the accredited processing plants.

To effect economies and simplification, three cooperative inspection agreements, covering different phases of the inspection program, were consolidated into a single, new agreement consummated with the American Turpentine Farmers Association Cooperative. Signatories to the two superseded agreements entered into supplementary agreements (under the new consolidated agreement), thereby retaining their status and privileges as cooperating agencies.

Upon request, various analyses were made of domestic and foreign rosin and turpentine for the prescribed, published fees.

Standardization

Official standards for rosin concern its color, the clarity of which determines grade and suitability for various uses. Increasing competition from substitute materials has created a need for developing additional tests and specifications for physical and chemical properties of rosin, other than color, better to determine its suitability for use in manufacturing various end products. Much work is being done in this direction in collaboration with the American Society for Testing Materials (ASTM). For example, test procedures have been developed for determining the acid number, saponification value, unsaponifiable content, volatile oil content, toluene-insoluble matter, iron content, and ash of rosin.

Specifications for American gum rosin, wood rosin, and tall oil rosin have been developed and recommended for acceptance by ASTM as tentative standards. Uniform specifications for dipentene and pine oil have been prepared and submitted for acceptance to ASTM. Tests for evaluating rosin oil have been improved and are being recommended for adoption as official standards by ASTM. Collaborative work, adapted to the use of standard laboratory equipment and de-

signed to save much time, has continued on methods for determining unsaponifiable matter in rosin.

A total of 84 sets of official United States rosin standards have been issued, of which 73 sets are out on security loan. Thirteen sets of standards were recalled and repaired to assure accuracy of color and suitability for grading rosin.

Regulatory Activities

A total of 181 samples were collected for the purpose of checking on the condition, quality, quantity, purity, and proper label description of turpentine sold in interstate commerce, and to control label statements on competing paint thinners. Although no evidence of willful violations, adulteration, mislabeling, or other indications of fraud were uncovered, 25 cases of other types of violations of the Naval Stores Act were found. These were brought to the attention of the applicable sellers and dealers and agreement was obtained to eliminate or to desist from objectionable features and practices.

Through other regulatory work, two dealers in the New York area were found to be selling adulterated turpentine. Because no interstate business was involved, the information was submitted to the New York State Department of Agriculture for appropriate action. Also, warnings were issued to a number of shippers of tank cars of turpentine containing excessive foreign matter to conform to standard specifications for turpentine sold in interstate commerce.

MARKETING AND FACILITIES RESEARCH

PMA, in seeking ways and means of bringing about more efficient marketing, encounters many problems that cut across commodity lines—that is, problems common to many commodities. In finding answers to these problems, PMA works in close cooperation with other agencies and groups concerned with marketing, including other branches and bureaus of the U. S. Department of Agriculture, State departments of agriculture and bureaus of markets, State agricultural colleges, municipalities, trade and farm organizations, transportation agencies, equipment manufacturers, engineering firms, and other groups concerned with improving the efficiency of marketing.

Most of PMA's cross-commodity research is carried out under authority of the Agricultural Marketing Act of 1946 and in accordance with recommendations of industry advisory committees established pursuant to that act. Individual programs are conducted in close cooperation with marketing firms and transportation agencies. The laboratory for conducting much of that research has consisted of warehouses, stores, transportation equipment, and other facilities of individuals and firms engaged in the marketing or transportation of farm and food products.

Planning Market Facilities in Specific Localities

Marketing facilities, previously planned in 11 cities, were in varying stages of construction. In the Atlanta, Ga., produce market a new store building with 8 store units was constructed and placed in opera-

tion. A market site was acquired for the farmers' market in Jacksonville, Tex., and the facilities were expected to be completed and in operation for handling 1953 fall vegetable crops. Plans were announced for the construction of a new \$1,750,000 wholesale produce marketing facility in Louisville, Ky. In Nashville, Tenn., a site for improved facilities was acquired and a contract let to put the site in condition for building. Construction work was near completion at the end of the fiscal year on a new Savannah, Ga., market facility, which will include an administration building, six dealer store buildings, and sales sheds for farmers and truckers. In Hartford, Conn., a new wholesale produce market was opened.

The market authority in Rochester, N. Y., is negotiating for the purchase of a 68-acre market site and plans to start construction in the near future. Construction of a new wholesale produce market in St. Louis, Mo., was completed during the year and occupied by dealers. Ground-breaking ceremonies were held on the site of the new produce terminal in Houston, Tex., which is to be built on one of the sites favorably considered in PMA's report. A new produce market is under construction in Indianapolis, Ind., the layout of facilities closely following those proposed by PMA. The Market Authority, created by the State of Massachusetts to construct facilities in Boston, has been unsuccessful in developing the project but meat wholesalers have proceeded with the construction of their part of the proposal in the area recommended. At the end of the year some of these wholesale meat plants had been completed and were in operation and the remaining meat stores were under construction.

Studies were made to develop plans for improved marketing facilities in 13 other localities in 10 States. These include 3 studies begun in the previous fiscal year and 10 started in the current year. Plans for a new wholesale market site and facilities for Bridgeport, Conn., were presented to local groups and a report was published later. This new market would cost about \$1,500,000. Estimated savings to dealers, for whom store space is planned, and to farmers, truckers, and buyers would amount to at least \$60,000 annually. A preliminary report was presented to the Twin City group recommending one consolidated wholesale produce market for the metropolitan area of Minneapolis and St. Paul, Minn. Alternate plans were given for separate facilities for each city in the event they could not get together on a single market. Three other cities for which studies were made of needs and plans for improved wholesale produce markets are San Diego, Calif., Milwaukee, Wis., and Birmingham, Ala.

A report on a cooperative study by PMA, and the State department of agriculture, and the Agricultural Extension Service of North Carolina sets forth findings and recommendations for improved grain marketing facilities and practices in western North Carolina. It is estimated that good storage and handling facilities and practices would save between \$5,000,000 and \$6,000,000 annually in the cost of bags and bag handling and in reducing the damage to grain caused by high moisture and insects. A report on a second grain study is being prepared on the facility needs in the Coastal Plains areas of North Carolina. A third study of grain marketing facilities and handling practices, in South Carolina, was started in cooperation with State and local agencies.

A report entitled "Egg Marketing Facilities in Winston-Salem, N. C., Trade Area" advised against facility expansion in this area at the present time. Three other egg studies covered assembly plants in Pennsylvania, Texas, and Virginia. In South Carolina a study was made to determine the need for new turkey and broiler processing facilities. The largest broiler processing plant in the State was remodeled and equipment added, as recommended by PMA.

PMA was called upon frequently throughout the year by individuals for advice and suggestions on building single warehouses, stores, and other types of marketing facilities.

A report entitled "Candling, Sizing, Packing and Materials-Handling Equipment and Methods Used in Egg Assembly Plants (MRR-47)" was based on information from 25 plants in 6 States. It provides plant operators with basic tools for analyzing their operations. The report considers such materials-handling principles as balanced handling, unit load, mechanized equipment, materials flow, review of operations, and preventive maintenance. Plans for plant layouts were also studied, and a second report presenting principles of layout and design has been prepared and will be published during the next fiscal year.

A study conducted in cooperation with the Texas Agricultural Experiment Station covers improved layouts, designs, and methods of operating livestock auction markets in that State. A report on part of this work, to be published by the Texas station, makes detailed recommendations for these improvements. In applying the principles involved in these improvements in an auction market handling about 700 cattle and 200 hogs per sale, it is estimated that the number of workers required on sales days would be reduced from the present average of 27 to 23. Work on other phases of the Texas study was begun. Work on a similar study of livestock auction markets in the Southeastern States, in cooperation with experiment stations, was started. Observations have been made of the operations and methods used in 15 markets in Georgia, Florida, and Mississippi. Work is planned in Virginia and Louisiana.

Case studies conducted in 12 frozen food distribution plants show many inefficiencies in order assembly operations. These include time spent in pushing cartons on dead conveyors, time lost in waiting as a result of unbalanced workloads, excessive handling of invoices, inadequate supervision of night work, and time lost in receiving and transcribing orders and transmitting them to the work rooms. Analysis also indicates that there is a great need for methods of reducing errors in filling orders. The need for improved equipment in the assembly operation has received special attention. By June 1953 new and improved equipment and revised methods had been installed in 4 pilot distribution plants. In 1 plant mechanical operations reduced the total warehousing crew from 11 to 8 men and the use of pallet racks in improving stacking methods increased the storage capacity by one-fifth. In another order assembly system labor requirements have been materially reduced by the use of special pushcarts. Results of some of these tests will be published during the next fiscal year.

Field work was completed on a study of principles applicable to the designing of efficient store buildings for produce dealers and sales sheds for farmers and truckers in wholesale produce markets. Also a

study has been under way on the organization, management, financing, and costs of operating wholesale markets. Data from 40 markets will be analyzed in this study which should be completed early in 1954.

The objectives of a final study in this general field are to develop principles and data which cotton warehousemen may use in selecting the location, equipment, methods, arrangement of facilities, storage patterns, size and type of structures, and fire-preventive system that will result in the lowest overall cost per bale for handling any particular volume of business. Much of the field work on this study has been completed.

Improving Handling Methods and Equipment

Studies of handling methods and equipment were conducted for apple packing and storage houses, public refrigerated warehouses, cotton warehouses, and stores and warehouses of fruit and vegetable distributors. The Washington State Apple Commission completed the contract study, mentioned in the 1952 report, on handling methods and equipment in Pacific Northwest apple plants. Eighty Washington State apple houses have purchased and used one or more of the portable mechanical lifts developed in that study for high-piling boxed apples, the resulting annual savings amounting to about \$1,500 per machine. The contractor gave technical assistance on materials-handling problems to 24 plants. It is estimated that this assistance will save about \$120,000 annually in handling costs. Material from the contractor's 950-page report will be published in a series of 5 reports. The first, *Apple Handling Methods and Equipment in Pacific Northwest Packing and Storage Houses (MRR-49)*, published in June 1953, covers an appraisal of methods and equipment for handling boxes of apples.

A study of materials handling in public refrigerated warehouses shows that, in single-story warehouses, handling by use of industrial forklift truck and pallet methods is more efficient than by using other types of equipment. In multistory warehouses, handling pallet loads on 4- and 6-wheel hand platform trucks from carriers to stacking points (or the reverse in loading out) and stacking pallet loads by industrial lift trucks proved superior to other methods.

A report on the receiving, ripening, and cutting of bananas will give the results of a study of seven different types of equipment used in these operations. In conducting this work assistance was given to dealers in improving their materials-handling operations, including assistance on the design and layout of new facilities.

A report entitled "*Cotton Handling Guide for Warehouse Managers and Foremen*" (MRR-50) suggests techniques by which cotton warehousemen can analyze their handling operations to detect waste and inefficiency and with a view to planning and instituting more efficient methods. The report shows that the chief causes of inefficiency are failure to make effective use of labor, to substitute power equipment for manual labor, and to make effective use of the equipment used. Promising results have been obtained in studies on the use of specially designed breaking-out equipment, and a report on three methods of breaking-out flat bales of cotton stored on head will be released.

Studies of Packing-Line Operations

Results of initial laboratory research on visual inspection grading in "packing-line" operations, were given in the 1952 report. Those results, obtained by the use of wooden objects simulating fruit and vegetable products, have since been tested in commercial plants in grading lemons, oranges, and white potatoes. It was found that when proper speeds of translation and rotation were obtained and the proper number of rows were kept moving past the inspector labor requirements were reduced 75 percent for lemons, 67 percent for oranges, and 10 percent for potatoes from those required in using the regular grading belts in the test plants. A report on this work entitled "Visual Inspection of Products for Surface Characteristics in Grading Operations" (MRR-45) was published.

A second study on packing-line operations, conducted under contract with the Washington State Apple Commission, is concerned with improving methods and equipment for sorting, sizing, and packing apples. In checking the performance of three types of apple-sorting tables in this study it was found that the reverse roll table which rotates the fruit as it passes the inspector offers the greatest possibilities for saving labor, and work to improve this table has been undertaken.

Transportation Facilities, Equipment, and Loading Methods

PMA worked on many problems involved in the transportation of frozen foods by motortruck. In cooperation with equipment manufacturers, truckers, and shippers, numerous shipping tests of perishable foods were made to determine the effectiveness of different equipment and methods. New methods of using dry ice in motortruck shipments of perishables, suggested by PMA, gave improved results when tested in 3 cross-country shipments of frozen citrus concentrates, hard-frozen pork bellies, and chilled beef quarters. Results of these tests were reported in 2 publications. Another new refrigerating system for motortrucks, using dry ice as a basic refrigerant but employing a secondary refrigerant in cooling coils, was tested in a shipment of frozen citrus concentrate from Florida to Philadelphia, Pa., and a report was prepared. Another report entitled "A Test Concerning Dry Ice and Mechanical Refrigeration in Transportation of Frozen Citrus Concentrate by Motortruck" shows that more effective temperature control is obtained from mechanical refrigeration, especially when used with a return air duct and ample clearance space for air circulation, than is obtained from placing blocks of dry ice on the top of the load and on the floor at the rear of the truck. In another test of a relatively new type of mechanical refrigeration, reported during the year, frozen turkeys were shipped by motortruck from Modesto, Calif., to Medford, Mass., in November 1952 and when they arrived, after being en route for 10 days the temperature of the birds was -13.4° , a rise of only 2.6° after loading.

Responding to a recommendation at the March 1953 meeting of the Transportation Advisory Committee, PMA in cooperation with other governmental agencies is developing plans to find ways of minimizing

the buildup of moisture condensation in the insulating material of refrigerated motortrucks.

A handbook designed to supply truckers with information on the protection of perishable commodities while in transit, proper equipment to use, loading methods, and other related matters, is almost completed and will soon be published.

Initial work was done to find means of improving railroad and motortruck equipment to minimize injury to livestock in transit. Tests are being made of nonskid floor covering supplied by the Asphalt Institute. Work was continued with a committee of the American Railway Engineering Association on the problem of developing methods to improve transit time. Assistance was given in the preparation of a report made at the Association's annual convention where it was decided to conduct more intensive surveys similar to the movement ratio originally suggested by PMA.

In another field of transportation activities research results have demonstrated that much of the transit loss and damage to perishables can be eliminated by improved shipping containers and improved methods of loading, bracing, and stripping of shipments. The WGA crate developed under a research contract with the Western Growers Association of Los Angeles, Calif., for use in the shipment of ice-packed lettuce and carrots, was reviewed in the 1952 report. A final report on the development of this crate and related work was published. The WGA crate nearly replaced the other wooden shipping containers for lettuce and carrots but the subsequent development of the vacuum cooling process, permitting lettuce to be shipped without crate or body ice, has opened opportunities for the use of cheaper fiber-board cartons. Due to the numerous questions raised as a result of this development a substantial part of this year's work under the association's contract is concerned with appraising the relative effectiveness and cost of the two general types of containers.

A summary report on Loss and Damage in the Transportation of Cantaloups, 1950-52, recommends the on-end loading method for cantaloups and estimates that its use would save at least \$2 million annually.

In a contract study entitled "Container Breakage in Top-Iced Shipments of Vegetables" it was found that, contrary to popular belief, melting of ice was substantially greater at the end of cars nearest to the bunker bulkhead than elsewhere and that more effective refrigeration and less breakage of containers would result if the top icing were banked to a depth of about 24 inches at the ends and not more than 12 inches in the middle of the car. Other phases of work conducted under contract with the association during the year included: (1) Test shipments to determine whether cauliflower could be effectively and more efficiently transported after a greater trimming of the wrapping leaves; and (2) test shipments of an all-purpose container for shipping tomatoes from California to eastern destinations.

In initial shipping tests for watermelons it was found that less damage resulted from loading Congo melons crosswise instead of lengthwise in the car. Further tests will be made in the fiscal year 1954. Other transportation problems receiving attention include new types of shipping containers for plums, palletizing and unitizing ship-

ping containers, and the effects of heavier loading of railroad cars in the shipment of perishables.

Work on Wholesaling, Retailing, and Packaging

The grocery trade has shown an increasing interest in PMA's work in the field of wholesaling, retailing, and packaging. For instance, summaries or excerpts from a PMA publication entitled, "Some Improved Methods of Handling Groceries in Self-Service Retail Food Stores" (MRR-7) have been printed in most retail trade periodicals and the report provided source material for the first three Store Managers' Helper circulars, issued by the Super Market Institute.

A publication entitled "Receiving, Blocking, and Cutting Meats in Retail Food Stores" (MRR-41) reports the results of research conducted in cooperation with two large supermarket organizations to find ways of reducing the cost of performing these operations. In 4 stores in which selected improvements in methods, materials, and equipment were made, labor productivity for the combined receiving, blocking, and cutting operations was increased by 27 to 39 percent. Labor requirements for these operations were reduced by 8 to 28 man-hours per week. It was found, for instance, that the number of sides of beef received per man-hour could be increased by 82 percent through the use of an overhead meat rail and a meat hook stabilizer. The time required to block a side of beef was reduced about 15 percent by improved methods and equipment. In the cutting operation, labor productivity was substantially increased by many improvements including an improved work place arrangement, a new type of cutting table, a special smear remover used with the power saw, and a special combination handsaw and knife.

Substantial progress was made in a study designed to develop improved methods of handling produce and frozen food in both service and self-service retail food stores. Basic data have been collected to determine the present allocation of man-hours by types of produce for each major handling operation. A comparative analysis of present handling methods and equipment is almost completed.

In 1951 a report was issued on a checkout counter which was 38 percent more productive than conventional equipment. Since then some improvements on this equipment have been made by industry. These improvements have been incorporated into new counters which are being tested in several stores.

A report entitled "Packaging and Displaying Meats in Self-Service Meat Markets" (MRR-44) completes one phase of the work on pre-packaging of meat, poultry, and other animal products. The objective of this work is to improve the efficiency of these operations through the development of improved handling methods, equipment, and layout. The packaging and displaying of meats in the self-service department of two typical food stores required more than half the total man-hours of each meat market. In 2 stores in which selected improvements were made in these operations, labor productivity was increased 10 and 23 percent, saving about 11 and 31 man-hours per week, respectively. In addition, material costs were reduced by more than \$19 and \$10 per week, respectively, in the 2 stores. Many detailed improvements that were made in the meat-wrapping operations

resulted in substantial savings in both labor and material costs. For example, in 2 markets the use of proper sizes of boards, trays, and film saved 8 percent of the board and tray costs and 19 percent of the cost of film. Improved methods were also developed in the pricing, weighing, and displaying operations. All these improvements are now being installed in several other stores in order to measure their effectiveness.

The study, mentioned in last year's report, of ways in which wholesalers and retailers can cooperate to increase their combined efficiency and lower food distribution costs has been carried a step further this year. The report *Views of Independent Grocers on Wholesaler-Retailer Relations* (MRR-42) summarizes the views of about 1,700 retail customers of 8 wholesalers. A basic finding of this survey is the need for wholesalers to tailor their retailer assistance programs so as to meet the requirements of the different kinds of retail operations. Most retailers are interested in some of the several special services offered by wholesalers. These interests, however, vary greatly among the types of grocers. Among other findings, the survey discloses that many retailers are willing to accept from wholesalers various proposals designed to reduce the cost of delivery.

Food retailers have shown unusually favorable interest in the report *Better Utilization of Selling Space in Food Stores—Part I* (MRR-30) which was issued during the year. An initial exploratory study, not yet published, made to measure the sales effectiveness of special end display of the largest volume items in the canned soup, canned milk, and shortening lines was completed during the year. The National Association of Retail Grocers is actively cooperating with PMA in applying the results of these studies to a number of stores selected by the association.

A report entitled "Improving the Performance of Retail Food Store Cashiers Through Better Training Methods" (MRR-48) summarizes the results of a study conducted in cooperation with two supermarket organizations to determine the relative effectiveness of two methods of training cashiers. The training method which gave the cashiers an opportunity to discuss their work and to participate in training conferences proved much more effective in improving employee performance than the conventional method of instruction by written memorandum. This was the case in stressing with cashiers the importance of accepting new procedures, adhering to established procedures, in extending courtesies to customers, utilizing time not occupied in serving customers, and of giving employee satisfaction.

Studies To Improve Market News

Three studies were completed and recommendations were made for improving the market news service in the commercially important broiler-producing sections in the Shenandoah Valley of Virginia and West Virginia, and in North Carolina. For the Shenandoah Valley section the reporting of prices paid producers for birds was made more up to date by using reports covering the day the sales were negotiated rather than following the established practice of using reports covering the day the birds were picked up and payment made, usually 1 to 4 days later than the day of sale. At the same time the reported

prices were more useful since they covered only 1 day's transactions rather than sales negotiations over several days. By using an earlier cutoff time in gathering data it was possible for the noon broadcast of the local radio station to report the market 1 day earlier. These and other market news service improvements have been made in this section as a result of the study.

The nearest market news information available to the broiler-producing sections of West Virginia, when this area was studied, came by leased wire from the Shenandoah Valley of Virginia and was distributed by the West Virginia Department of Agriculture. The study revealed that broiler prices in the Wardensville section of West Virginia were comparable with those in the Shenandoah Valley and, as recommended by the study, the Virginia Market News reports have been improved by including information from the Wardensville section. Other improvements, applicable to the South Branch section of West Virginia, have been made. Also, in the broiler-producing sections of North Carolina where market information needs are quite different, the service has been improved as a result of the study.

Changes in methods of marketing poultry and eggs during recent years have necessitated that a complete appraisal be made of the adequacy of other market news reports for these products. A study was undertaken to improve market news reporting of the volume of poultry and eggs moving through assembling and processing plants. Since July 1952, receipts of eggs, hens, cocks, broilers, and turkeys from 200 plants in 17 Midwestern States have been gathered and reported on a research basis. Some of the problems receiving attention in this study are methods of gathering data, size of sample, and accuracy of the reports.

Work to develop test methods of reporting feed market news was continued during the year. The trial reporting conducted under contract with the University of Arkansas was completed in June 1953. These reports proved practical and useful. The methods developed in this study are now being used on a regular service basis by the States of Arkansas and Alabama.

During the year an analysis was completed and a publication issued on methods of reporting volume of retail sales of individual food commodities. This was part of an overall study to determine the practicability of market news reporting at the retail level.

Developing New Service Work in Marketing

The Agricultural Marketing Act of 1946 authorizes cooperative projects between the United States Department of Agriculture and State departments of agriculture, under which the latter conduct marketing service activities on a matched-funds basis. A program for developing new marketing service activities under this authority has been in operation since 1947.

Effective governmental aid in the marketing field requires much more than research and the publication of research reports. It also requires diagnosing marketing ills, prescribing proper remedies, and rendering on-the-spot assistance. The State departments of agriculture, through their regular activities such as market news, grading and inspection, and regulatory work, are brought in close contact with

the marketing operations and marketing agencies in their States and are, therefore, in a favorable position to conduct market service work.

Under the Agricultural Marketing Act of 1946, three broad fields of marketing service work have been developed, in which each participating State conducts one or more lines of work within one or more of these fields. These are: (1) Demonstrations and other activities designed to improve and maintain the quality of agricultural products and to expand sales volume; (2) technical assistance to marketing agencies wishing to make improvements in marketing methods, facilities, and plant layouts; and (3) collecting and disseminating needed market information which is not otherwise available and conducting experimental market news services.

During the year 32 States and 3 Territories participated in this program. They conducted 89 separate lines of work in the 3 fields. These new lines of marketing service work have added to and supplemented the regular programs of the State departments of agriculture. Annual reports from the States covering their activities during the year under each line of work, now being received, will be analyzed and summarized.

FOOD DISTRIBUTION PROGRAMS

Significant shifts in program emphasis took place in the operation of PMA's food distribution activities during 1953. These shifts reflected the change in the overall food supply situation—from one of a generally balanced demand-supply position to one of increasing imbalances. As a result, less emphasis was placed on work in connection with defense activities, particularly with respect to planning for possible disruptions in civilian food supplies, and more emphasis on programs designed to increase and stabilize food markets.

By the end of the 1953 fiscal year, work on civilian food requirements had been placed on a standby basis. On the other hand, work in connection with merchandising programs for plentiful foods was at a peak.

National School Lunch Program

The national school lunch program established a new record of participation in 1953 and continued to increase its contribution to child nutrition and to the expansion of farm markets.

In 1953, 9,800,000 children participated in the program, 5 percent above the peak participation in 1952. Schools in the program served 1,600,000,000 meals in 1953, approximately 100,000,000 more than in 1952. Seventy-one percent of the meals served met the standard for the type A lunch—a complete meal with milk. Out of every 9 meals served, 1 was served free or at reduced cost to children unable to pay the full price of the lunch.

Participating schools used 2.1 billion pounds of food, about 80 percent of which was purchased from local producers, wholesalers, and retailers. The value of these local food purchases totaled \$265,000,000 in 1953, as compared with \$250,000,000 in 1952.

Congress appropriated \$83,367,491 for program operations in 1953. States and Territories were apportioned \$67,185,000 in the form of cash payments, to be used by schools to purchase food from local

suppliers. A total of \$14,770,000 was used for the direct purchase of commodities under the authority of section 6 of the National School Lunch Act. The remaining amount, \$1,412,000, went for administrative expenses—this being well under the 3.5 percent authorized in the act.

Financial contributions to the program from sources within the States continued to increase, totaling \$380 million for 1953. Federal cash assistance funds, which are required to be matched at a 1.5 to 1 ratio from sources within the State, actually were matched at a rate better than 5 to 1 in 1953.

The national school lunch program continued to be the most important food outlet for commodities acquired by the Department under surplus-removal and price-support programs. Approximately 115 million pounds of these commodities were used by schools, in addition to the 84 million pounds of commodities purchased specifically for school lunch use under section 6 of the National School Lunch Act.

Total program expenditures for food, labor, and equipment (including the value of donated commodities) amounted to approximately \$512 million. Total program expenditures for 1952 amounted to approximately \$435 million.

During the year, the school lunch program was administered by PMA in 1,855 nonprofit private schools that served lunches to 301,000 children in 27 States and 1 Territory. In these cases, State agencies are prohibited by law from disbursing Federal funds to private schools.

State educational agencies expanded their workshop programs, designed to improve food-management practices of local school lunch managers and cooks. In its work with States, PMA placed special emphasis on efforts to obtain more effective distribution of available donated foods and to encourage the use of low-cost menus featuring such foods.

Area advisory committees, established in 1952 and composed of State school lunch supervisors, continued to cooperate with PMA on 2 major school lunch projects. One group of area committees cooperated in a review of school lunch nutritional requirements. Under their supervision, extensive field tests of a tentative revision of the type A pattern were completed. The reports of these tests are now being reviewed by all States and by PMA. Final recommendations concerning any needed revisions in the type A pattern are expected early in the fiscal year 1954.

The second group of area committees assumed responsibility for the conduct of two school lunch research studies undertaken in various States throughout the country. On the basis of these preliminary studies, the research committee will advise PMA concerning the further development of such work.

These area committees have proved to be effective mediums for obtaining State participation in planning program improvements. As another means of securing more State and local participation, plans were underway at the close of the fiscal year to invite a representative group of State and local people to a meeting in Washington to consult on major school lunch administrative problems.

By act of Congress (66 Stat. 591), the national school lunch program was extended to the Territory of Guam, effective at the beginning of the 1954 fiscal year.

Plentiful Foods Program

PMA considerably increased its emphasis on activities designed to assist producers to move larger amounts of foods through normal trade channels. Under this program, PMA supports the work of producers and food trade and allied groups in merchandising programs aimed at stimulating sales of plentiful foods.

Each month PMA issues a Plentiful Foods List, which informs the food trades and all information outlets concerning foods that are in plentiful supply and therefore in need of merchandizing assistance. During 1953 an average of 19 foods appeared on each monthly list, compared with 17 for 1952. The monthly list was distributed—on a request basis—to 27,000 recipients in 1953, including national and State food industry associations, individual food distributors, associations of allied industries, and public information media.

In cooperation with producer groups and the food industry, 30 special merchandising programs were undertaken in 1953. These programs are designed to encourage the food trades and information outlets to concentrate their advertising and merchandising attention on a single food item during the period of peak marketings. Twenty-five of these programs, which are conducted at the request of producers, were on an area or local basis. Five were on a nationwide basis and assisted in increasing the consumption of pears, peaches, raisins, beef, and honey.

These special plentiful foods programs have proved to be very beneficial to producers, distributors, and consumers—reports indicate substantial increases in sales during the special promotion period. The special program on honey was the first of this type of program to be undertaken as a long-range attempt to develop a more stable year-round market for an item. The program was developed early in the spring of 1952 and was aimed at increasing consumer demand through advertising and merchandising during the entire month of October. The results of this program were so productive that the industry has organized a marketing committee to coordinate industry plans for continued merchandising efforts.

During the spring of 1953, PMA cooperated with all segments of the food industry in a nationwide merchandising program to increase the consumption of beef. This was one of the several actions taken by the Department to promote orderly marketing and stabilize cattle prices. Sales and consumption of beef were greatly increased and the program demonstrated that coordinated promotional efforts by all segments of the food industry can be set into motion rapidly to handle marketing problems.

Special reports were prepared on both the honey and beef programs for the information and guidance of producers, processors, and distributors. They are being used with good effect in planning merchandising programs on other food commodities in need of marketing assistance.

These plentiful foods activities are becoming an increasingly effective means of mobilizing the resources of the food industry in the solution of marketing problems. At the close of the fiscal year, plans were under way to again support industry efforts to promote beef sales in the fall when large numbers of cattle will be moving to market.

Direct Distribution Program

Direct distribution continued to provide constructive outlets for food commodities acquired by the Department under its surplus-removal and price-support programs and for distribution of commodities purchased specifically for the school lunch program. Declining prices in certain farm markets resulted in a wider variety of commodities and an increase in the quantity of food available for donation under direct distribution in 1953.

During the fiscal year 1953, a total of 268,000,000 pounds of commodities were distributed to eligible recipients, compared with 240,600,000 pounds distributed in 1952. About 9,800,000 children in about 57,000 schools and 1,000,000 inmates in more than 3,500 charitable institutions participated in the domestic distribution programs in 1953.

The distribution of commodities made available under section 32 totaled about 158,000,000 pounds in 1953. Commodities distributed were fresh apples, fresh pears, concentrated orange juice, nonfat dry milk solids, butter, canned cherries, pork products, frozen turkey, shell eggs, frozen beef, and cottonseed oil. Under section 416 of the Agricultural Act of 1949, 25,662,000 pounds of nonfat dry milk solids were donated to United States private welfare agencies for distribution to needy groups overseas.

A total of \$14,770,000 was available to purchase 84,000,000 pounds of selected foods for use in the national school lunch program, under the authority of section 6 of the National School Lunch Act. The commodities purchased were dry beans, American process cheese, canned fruits, canned tomatoes and tomato paste, canned vegetables, and peanut butter.

Direct distribution operates under a plan whereby agencies within each State order carload shipments of commodities, and under an agreement with the Department, are responsible for the proper distribution and delivery of such foods to eligible recipients served by them. These agencies are accountable to PMA for all distribution within their area and maintain or arrange for such warehousing and trucking facilities as may be necessary. PMA continued its efforts to improve the operational practices of these distributing agencies. An intensified program of administrative analyses was undertaken in 1953 which stressed proper accountability, adequate storage, and the effective utilization of commodities by recipients.

Continued progress also was made in consolidating intrastate distribution responsibilities into a fewer number of agencies having statewide responsibilities. Two large States, New York and Texas, established statewide agencies in 1953, eliminating about 30 county or area agencies. Distribution in all States is now carried out by State rather than local agencies. These consolidations not only result in improved coverage and operational practices on the part of distributing agencies but also reduce the time and travel requirements of the PMA personnel who deal with such agencies.

Food Preservation Program

Community canneries and processing facilities in tax-supported institutions are widely used to process food for school lunch programs.

Many institutional facilities also process food for use in other institutions as well as for their own use. Because such facilities help to expand markets for locally produced fruits and vegetables, PMA assists States to improve and expand such facilities.

An informal survey, conducted by PMA in 1953, showed that 314 tax-supported institutions had food-processing plants in operation. Their daily capacity was in excess of 2,500,000 pounds. More than 1,500 community canneries also were operating in 1953.

Such facilities were extensively used in the fiscal year 1953 to process locally produced perishables. In Oklahoma, for example, 555 tons of locally produced vegetables were processed in a State institution for statewide use. In Utah, during the period when seasonably heavy supplies of cherries were causing a marketing problem, the State school lunch agency purchased nearly 30,000 pounds and had them processed at a community cannery for later distribution to schools. Likewise, the orderly marketing of a large crop of Utah apricots was aided through the purchase and processing of over 52,000 pounds for school lunch use.

These facilities also help to expand outlets for section 32 perishables, because States are in a position to process for later use that portion of the supply that is in excess of current needs. Almost 9 million pounds of section 32 apples and pears were processed for school lunch and institutional use in 1953.

PMA food preservation specialists assisted State agencies with in-plant training when problems were encountered in handling quantity lots of commodities. State agencies also were assisted in conducting 60 canning and freezing workshops in which key personnel from 148 canneries and 1,065 schools participated. At the request of State agencies, 109 community and institutional plants were surveyed to determine improvements needed for efficient operation. Floor plans were developed for constructing or remodeling 39 plants, and 456 technical services were rendered in plants to improve processing techniques.

During 1953, increased emphasis also was placed on assisting schools and other eligible recipients to make maximum use of direct distribution commodities.

To minimize the possibility of loss or deterioration of such highly perishable commodities as frozen ready-to-cook turkeys, frozen beef, Bartlett pears, and butter, instruction sheets on properly storing and handling them were prepared and distributed to schools and institutions. Instructions also were prepared on the care and use of cottonseed oil and olive oil—two commodities which had not been previously distributed. In an effort to increase the use of these commodities by schools and institutions, and thus develop new market outlets, suggestions were included for using oils in cooking as well as in preparing salad dressings.

Because of the problems encountered by schools in cooking and serving the large hams distributed under section 32, PMA worked with the Army Quartermaster Corps to develop instructions for boning and cutting hams, based on the method now used in Army camps. By this method, the hams—boned and cut into three sections for uniform slicing—may be cooked and served at noon of the same day. This method, as well as the one developed early in 1952 for boning whole hams weighing 14 pounds or less, was demonstrated by PMA food

preservation specialists at 48 workshops sponsored by State agencies in 12 States. Participating in these workshops were 1,938 school lunch cooks and managers who, in turn, demonstrated the methods to other managers and cooks.

Civilian Food Program

PMA continued its responsibility, authorized under the Defense Production Act, for maintaining a continuous review of civilian food supplies. However, as the year progressed the possibilities of disruptions in civilian food supplies lessened and the scope of this review activity was reduced. At the close of the fiscal year, this work was placed on a standby basis.

During 1953, quarterly reports were prepared covering civilian food requirements for 155 food items for the fiscal years 1953 and 1954. In developing these requirements, consideration was given to nutritional needs, market demand, inventories required in distributive channels, and previous consumption patterns.

Under NPA Orders M-4 and M-4A, as amended, and CMP Regulation 6, PMA was responsible for reviewing and making recommendations on applications of wholesale food dealers to commence or continue construction of food warehouses and places of business. During the fiscal year 1953, action was completed on 34 such applications. The improved supply position for critical materials, however, made it possible to eliminate such construction controls in the latter part of the fiscal year.

PMA continued to cooperate with the Federal Civil Defense Administration in a program to develop plans for insuring the distribution of civilian food supplies during a civil defense emergency. Flood disaster and tornado damage presented continuing opportunities for the demonstration of emergency food distribution. Although major reliance was placed on food supplies in normal channels of trade, Government stocks of foodstuffs were distributed in disaster areas through the cooperation of PMA personnel, State and local organizations, and the American Red Cross.

STORAGE AND TRANSPORTATION ACTIVITIES

The indicated heavy takeover of corn, wheat, and other grains under the 1952-crop price-support program created a serious storage problem for PMA and CCC during the latter months of the fiscal year. Accordingly, steps were taken to assist farmers and warehousemen to expand their storage facilities, to increase the capacity of CCC-owned storage space, to arrange for the use of emergency storage facilities, and to offer producer resale loans on corn, oats, and wheat. There was a substantial increase in the total grain storage capacity licensed under the United States Warehouse Act. As in other years, PMA participated before regulatory agencies in numerous actions to obtain reasonable and equitable transportation rates, rules, and charges. PMA continued to arrange for the transportation of a wide variety of farm commodities for domestic and foreign program use. Defense Transport Administration's General Order No. 2, under which PMA assisted in regulating movement of bulk grain, was suspended in March 1953. Issuance of the cold storage report was continued.

Storage Expansion

Construction by farmers of on-farm storage structures having an aggregate capacity of approximately 19 million bushels was completed during the year under CCC's farm-storage-facility loan program. This brought the total construction of on-farm storage capacity under the program to approximately 145 million bushels since the program was announced in June 1949.

About 125 loans totaling \$200,000 were made to farmers under the 1952 program to finance the purchase of mobile drying equipment for the conditioning of grain. Since the program was first announced in July 1950, 442 loans totaling approximately \$675,000 have been made.

Contracts under the CCC storage guaranty program outstanding at the end of the year totaled about 26 million bushels. Under this program, CCC encouraged commercial grain warehouse firms to construct facilities for grain storage in areas where existing facilities were inadequate. The program, first announced in August 1949, provided for an annual payment by CCC, if occupancy of the newly erected structure during the contract period fell below a specified percentage of the storage capacity. Storage space for approximately 95 million bushels of grain was constructed by cooperative associations and commercial warehousemen under the program. The program was discontinued on February 28, 1951, and no new contracts have been made since that date.

To meet the need for the storage of price-support peanuts of the 1952 crop, CCC purchased and erected in Texas, Oklahoma, and Virginia large flat storage structures aggregating about 1,700,000 bushels in capacity at a cost of approximately \$580,000. In June 1953 to provide space for corn in the Midwest where the takeover of the 1952-crop corn threatened to create a serious storage problem, CCC issued an invitation to manufacturers to bid on grain-storage structures and started to contract for bins ranging in size from 3,250 bushels to 44,000 bushels to hold approximately 90 million bushels.

As a further measure to help overcome the shortage of storage space, PMA commodity offices were authorized, where regular commercial space was inadequate, to lease emergency facilities. Accordingly, arrangements were made with the Maritime Administration for the use of 75 ships anchored in the Hudson River at Jones Point, N. Y., and 50 ships anchored in the James River at Fort Eustis, Va. This storage space provided for an additional 29 million bushels of wheat. As of June 30, 1953, 40 of the 75 ships on the Hudson River had been loaded with 9,048,771 bushels of wheat, and 2 of the 50 ships from the James River had started loading at Baltimore and Norfolk. New maintenance practices have been instituted to keep the wheat in condition.

The Uniform Grain Storage Agreement is a contract between CCC and warehousemen including country elevators, subterminal, and terminal elevators. This contract covers the responsibility and obligations of the warehouseman and CCC with respect to wheat, corn, rye, barley, oats, soybeans, flaxseed, grain sorghums, and such other grains or farm products as may be from time to time included in the Schedule of Rates. Under the Uniform Grain Storage Agreement there are

9,050 signed contracts representing 1,198,003 thousand bushels of storage capacity.

Other agreements entered into between CCC and warehousemen are the contracts covering seeds, dry edible beans, and rice. Under the seed agreement there are 274 signed contracts representing 6,340,308 hundredweight of storage capacity. Under the bean agreement there are 300 signed contracts representing 9,330,247 hundredweight of storage capacity. Under the rice agreement there are 10 signed contracts representing 374,400 hundredweight of storage capacity.

Storage Capacity Survey

Off-farm commercial-type grain-storage capacity, surveyed in 1951, was resurveyed early in 1953. The new survey showed an increase of about 40 million bushels during the year and a half and a total for the United States of more than 2,210,000,000 bushels.

Conditioning and Maintenance

CCC grain-storage structures were repaired during the year so as to be in good condition for the storage of 1952-crop grain.

Recommendations were made to State PMA committees for new and better rodent control measures. Recommendations also were made for the use of several tested caulking and coating materials which would seal and protect the structures and at the same time withstand the expansion and contraction of structure walls brought about by changes in weather temperatures, grain pressures, and wind vibrations.

Experiments have been conducted in several States with a new type of grain augur which cleans and screens grain as it is elevated. Considerable research has been undertaken with respect to the standardization of the grain handling and conditioning equipment which is being used at CCC bin sites.

Experiments are continuing in conjunction with several State agricultural colleges with perforated ventilating tubes inserted vertically in grain-storage structures for aeration of grain. Approximately 1,770 standard, metal grain-storage structures were dismantled and transferred from the eastern seaboard, the South, and the Southwest to Kansas for emergency wheat storage, thereby adding about 5,900,000 bushels of storage space to that already available in Kansas.

A study is being made of methods of measuring grain-storage structures in order that a standardized procedure can be developed for the taking of physical inventory of CCC-owned commodities in CCC-owned storage structures.

Administration of the United States Warehouse Act

As of June 30, 1953, licenses under the United States Warehouse Act were held by 1,444 warehousemen storing various commodities. Of the total, the following number were issued to warehousemen storing: Grain, 904; cotton, 469; miscellaneous, 71. Amendments were made to 184 licenses, 20 licenses were suspended, and 17 were reinstated.

Inspectors', weighers', graders', and samplers' licenses were held by 3,882 individuals on June 30, 1953; 531 new licenses were issued and 519 licenses were canceled.

The number of supervisory examinations by warehouse examiners decreased from an average of 2.5 examinations per warehouse in 1952 to an average of 2.4 per warehouse in 1953. In both years the average examinations were considerably under the goal of four examinations per warehouse each year. Because of the anticipated heavy stocks of cotton and grain that will be carried in storage, it is expected that the average of 2.4 examinations per warehouse in 1953 will be considerably reduced for the fiscal year 1954. Also, prospects for big crops indicate there will be a continued expansion of licensed warehouse space.

Steps were taken to amend cotton and grain regulations to provide for bond coverage equivalent to bonds required by CCC. The net effect was to reduce substantially the amount of bond and net assets requirement of cotton warehousemen and to adjust the upper limits of bonds required of grain warehousemen.

Table 7 shows licensed storage capacity at the end of the fiscal years 1952 and 1953.

TABLE 7.—*Storage capacity licensed under the United States Warehouse Act, by commodities, fiscal years 1952 and 1953*

Commodity	Unit	June 30, 1952	June 30, 1953
Cotton	Bale	11, 017, 436	10, 511, 953
Wool	Pound	43, 253, 800	42, 343, 800
Tobacco	do	250, 000	250, 000
Fruit, cold packed	do	6, 000, 000	6, 000, 000
Cherries in brine	do	8, 846, 000	8, 846, 000
Grain	Bushel	459, 706, 100	484, 387, 470
Nuts	Ton	50, 070	41, 470
Cottonseed	do	21, 000	
Broomcorn	Bale	14, 850	14, 050
Dry beans	Hundred-weight	2, 269, 176	2, 081, 176
Seeds	do	201, 187	201, 187
Canned foods	Case	1, 825, 000	1, 721, 000
Sirup	Gallon	1, 673, 640	1, 943, 640

Transportation Rates and Services

The Secretary of Agriculture is authorized and directed under the Agricultural Adjustment Act of 1938 and the Agricultural Marketing Act of 1946, to assist producers of agricultural products in obtaining and maintaining reasonable and equitable transportation rates, rules, and charges.

Delegated this responsibility by the Secretary, PMA participated in 106 transportation actions during the fiscal year 1953. Of these actions, 29 were of a general nature (rail 9, motor 13, water 5, air 2). Of the remainder, the following commodities were involved: Cotton and cottonseed products, 4; dairy and poultry products, 4; fruits and vegetables, 12; grain, grain products and hay, 23; livestock and live-stock products, 19; wool and mohair, 1; fertilizer and fertilizing materials, 11; fish and fishery products, 2; and agricultural implements, 1. Of these actions, 22 were concluded favorably to agriculture, 12 unfavorably, and 72 were still pending at the close of the year.

Numerous actions were also taken in connection with the transportation of commodities owned and shipped under the many programs of the Department and CCC. Forty-eight adjustments in transportation rates and services resulted in advantages to the Government. The published rules for the use of the PMA commodity offices in protecting perishable shipments were revised. Assistance was given in obtaining freight cars for shipping hay, fertilizer, and vegetable oils.

Recommendations for the use of motor carrier transportation were made when reduced transportation charges were effected. Adjustments of claim settlements for and against the Government were made. Inquiry into the causes of excess damage to cheese shipments was made and corrective actions recommended. Clarification in the railroad rules governing the transit of wool was requested and received.

Transportation of Government-Owned Commodities

As in other years, PMA arranged for the transportation of a wide variety of farm commodities for domestic or foreign program use.

Domestic shipments, consisting largely of commodities acquired under price-support, surplus removal, or school lunch programs, moved to or from storage, to schools, and to charitable institutions. Foreign shipments moved, under programs administered by the Department of Agriculture, the Foreign Operations Administration, the Department of Defense, the Armed Forces, and various international relief organizations, to destinations all over the world.

In collaboration with the General Services Administration and the Department of Defense, PMA arranged for the importation of Egyptian cotton for stockpiling. Also, PMA was responsible for the importation of strategic materials obtained through the barter of surplus farm commodities.

Acting as agent for the Foreign Operations Administration, the Department of State, and the Department of the Army, a total of 154 bookings of ocean shipping space, including chartered vessels and berth cargo, was arranged, representing an expenditure of approximately \$5,600,000. In addition, there were 56 bookings under the national school lunch and section 32 programs for Hawaii, Puerto Rico, and the Virgin Islands. Through negotiation of special rates for many shipments, savings of approximately \$900,000 were effected.

Grain Port-Handling Permits

The purpose of Defense Transport Administration General Order No. 2, which became effective in March 1951, was to regulate movements to, and allocate cargoes between, port facilities for the storage and handling of bulk grains for export, thus obtaining maximum utilization of port elevators and railroad equipment. In this DTA order the Department was delegated authority to recommend port grain-handling permits for all governmental and commercial accounts.

In March 1953, General Order No. 2, DTA, was suspended. During the 9 months of the year that the system was in operation, 2,100 permits were issued for a total of 8,721,000 long tons of grain, which included both CCC and commercial exports.

Cold Storage Report

The Cold Storage Report is issued monthly and provides information, current as well as historical, concerning the end-of-month stocks in public, private, and semiprivate cold storage warehouses, including stocks in meat packing plants. The commodities reported on comprise the majority of the commodities stored in refrigerated facilities. These are fresh and frozen fruits and vegetables; shelled and unshelled nuts; dairy products; shell, frozen, and dried eggs; meat and meat products.

Requests for the Cold Storage Report totaled approximately 40,000 during the fiscal year 1953. In addition, the reprinting of all or parts of the report by press services, and trade journals increased its total distribution to an estimated 336,000 annually. News items from the report are also published in the various newspapers of the country and it is also used by approximately 1,400 radio broadcasting stations as a source of information.

ESTIMATES OF REQUIREMENTS

PMA develops estimates of domestic and foreign requirements for United States foods and agricultural commodities and relates them to anticipated supplies on a short- and long-range basis. Coordination of estimates of supplies forming the bases for supply and requirements forecasts and for allocation planning is obtained through a system of intradepartmental supply estimates committees. The Interagency Food Committee and its various commodity allocation subcommittees facilitate Governmentwide participation in the development of allocation and related programs.

Requirements

During the year 1953, claimant agencies continued to submit their requirements semiannually, or as significant changes occurred. Two general reviews of the supply requirements situation and outlook were made during the year. A projection of requirements and anticipated supplies through the 1958 fiscal year, which was initiated during the preceding year at the request of the Food and Agriculture Organization, was completed during the early part of the year.

Mobilization Planning

As a guide in determining the adequacy of probable production and the extent and pattern of desirable production shifts in an emergency situation, estimates were developed of supplies and requirements for major agricultural commodities during a hypothetical 3-year mobilization period. For those commodities for which estimated supplies fell short of estimated requirements, proposals were made of the most probable utilization, by claimant groups, of the supplies estimated to be available. This work included projections of trends in crop acreages, assuming that some shifts of acreage away from crops in more than adequate supply would be encouraged during a mobilization period. It also included projections of livestock production reflecting

increases in prospective demand, shortages of labor, the prospective feed situation, and the phase of the cattle cycle during the mobilization period. At the request of the Office of Defense Mobilization, these commodity estimates were translated into terms of their contribution to the gross national product.

At the request of ODM, PMA was asked to review the functions the Department of Agriculture would expect to perform in a mobilization period. PMA prepared an outline of these functions, using World War II experience as a background.

Production Programing

Work on 1952 production goals was completed during the year, but the program for 1953 was dropped except for vegetables and melons. On these crops the program of announcing suggested acreages for the processing and fresh crops is designed to lessen the need for surplus disposal and diversion programs. Because of the prospects for reduced exports for cotton, special work was done in early 1953 to advise farmers of the changing situation so as to guide them in adjusting plantings to the lower level of prospective utilization. Farmers also were urged to reduce their plantings of flaxseed for harvest in 1953 by 10 to 15 percent below the acreage of 1952, instead of increasing their plantings by 20 percent, as the March Intentions-to-Plant Report indicated they might do.

ALLOCATIONS AND EXPORT CONTROLS

PMA establishes allocations and distribution controls whenever essential in the national interest. Because of continued improvement in the supply situation, however, few allocations or distribution controls were needed during the fiscal year 1953.

Defense Food Order 1, under which domestic end-uses and inventory levels of castor oil had been controlled since the early part of 1951, was suspended effective April 1, 1953. Allocations of the 1953 packs of certain canned fruits and canned vegetables were developed and Defense Food Order 2, under which packers are required to reserve specified percentages of their packs for procurement by the Department of Defense, was extended to cover the 1953 packs.

United States exports of rice have increased in the last 2 years to record levels. Exports in 1952-53, practically all in the form of milled rice, amounted to the equivalent of 25,400,000 hundredweight of rough rice, and to 24,100,000 hundredweight in 1951-52, as compared with a 1946-50 average of 13,800,000 hundredweight. Export demand during 1952-53, however, materially exceeded the quantity of rice the United States had available for export. On September 10, 1952, it became necessary to reinvoke allocations and export controls on rice to bring about equitable distribution, and controls continued in effect throughout the remainder of the fiscal year. The rice allocation program was designed primarily to enable the Department of Defense to obtain sufficient supplies of rice to meet its needs in Korea and the Ryukyus, to meet the emergency requirements of other far eastern countries, to maintain movement of United States rice to traditional markets, and to assure retention in the United States of sufficient supplies for domestic consumption.

It was possible, because of overall improvement in the supply situation, to remove export controls on cotton linters, tung oil, and castor oil, which had been in effect at the beginning of the 1953 fiscal year.

The Export Control Act of 1949 requires the Secretary of Commerce to seek information and advice from the several executive departments and agencies concerned. This consultation is accomplished through the Interdepartmental Advisory Committee on Export Policy and its subcommittees. PMA represented the Department of Agriculture on these committees. During the fiscal year, more than 200 program determinations were issued covering export control actions recommended by the Interdepartmental Advisory Committee. The committee recommended general export control policy and specific commodity quotas for export licensing, as well as the export control of strategic commodities. PMA also made recommendations to NPA in the administration of priorities for procurement of United States materials and equipment for foreign facilities in the agricultural area.

IMPORT CONTROLS

PMA participated in the administration of a number of import control operations during the year. These were carried on under authority of the Defense Production Act of 1950, as amended, section 22 of the Agricultural Adjustment Act of 1933, as amended, and other statutes.

Import embargoes were in effect at the beginning of the year, under Defense Food Order 3, on butter, nonfat dry milk solids, flaxseed, linseed oil, peanuts, peanut oil, and rice. Also under DFO 3, there were quotas on casein, milk compounds, and Cheddar, blue-mold, and Edam and Gouda cheeses, and certain varieties of Italian-type cheese. The action to continue controls on these products into the fiscal year 1953 also eliminated previous restrictions on imports of Emmenthaler or Swiss, Gruyere-process, Roquefort, and specialty cheeses and on certain rice and flaxseed products. These controls were administered in the fiscal year 1953 under authority of section 104 and the allocation provisions of the Defense Production Act.

Effective October 1, 1952, controls were removed on imports of Stilton cheese and Italian-type cheese manufactured from sheep's milk. Effective December 31, dried whole milk, dried buttermilk, and dried cream were placed under control on a quota basis, and restrictions were removed from casein and from processed cheeses containing Edam or Gouda. Effective April 1, 1953, dried whole milk, dried buttermilk, and dried cream were placed under embargo. Effective April 8, tung oil and tung nuts were placed under control on a quota basis.

The method of enforcing the import control program was basically modified by enlisting the active cooperation of the Bureau of Customs, Treasury Department. During the course of the year, customs officers at the ports of entry used by the licensees were furnished copies of import authorizations. The officers maintained records of importations against each authorization and thus were in a position to deny entry of quantities in excess of those authorized. In other respects, the method of administering the program was generally the same as before. Import quotas were divided among individual importers on a basis which largely reflected their share of import business during

previous representative periods. Generally, import authorizations were issued in such a manner as to protect the relative position of individual supplying countries.

Anticipating the expiration of section 104 on June 30, 1953, PMA investigated the extent to which commodities being imported were interfering with price-support and other programs of the Department. Section 22 of the Agricultural Adjustment Act of 1933, as amended, requires the Secretary of Agriculture to advise the President whenever the Secretary has reason to believe that there is interference. Section 22 also authorizes the President, after obtaining the recommendation of the Tariff Commission, to impose fees or quantitative limitations on the importation of the interfering commodities.

During the course of the year section 22 investigations were undertaken on crimson clover seed, Ladino clover seed, barley, oats, wool, edible tree nuts, peanuts, peanut oil, flaxseed, linseed oil, tung nuts, tung oil, butter, butter oil, dried whole milk, dried buttermilk, dried cream, dried skim milk, milk compounds, and Cheddar, Edam and Gouda, blue mold, and Italian-type cheeses made from cow's milk.

PMA's investigations were undertaken in cooperation with the Office of the Solicitor, Bureau of Agricultural Economics, and Foreign Agricultural Service. Where appropriate, recommendations were developed for submission to the President. In instances where the Tariff Commission held hearings, briefs were prepared for filing with the Commission in support of the request for action, and PMA officials testified at the hearings.

As a result of these investigations the Secretary asked the President to request a Tariff Commission investigation on wool, the commodities under control under section 104, and oats. The Tariff Commission on its own initiative conducted hearings on edible tree nuts.

Import controls under section 22 were imposed on both almonds and filberts. By Presidential proclamation on June 8, 1953, import controls under section 22 were placed in effect for the fiscal year 1954 on peanuts, peanut oil, flaxseed, linseed oil, and all the dairy products on which an investigation had been conducted earlier in the year. At the end of the fiscal year, hearings on the need for import controls on oats were scheduled by the Tariff Commission for July 7, 1953.

MATERIALS AND FACILITIES

During the fiscal year 1953, PMA continued its overall defense activities in connection with nonfood materials and facilities under the Defense Production Act of 1950, as amended, and authority delegated to the Secretary of Agriculture by Executive orders issued pursuant to the act. The authority delegated to the Secretary by these Executive orders with respect to food and the domestic distribution of farm equipment and commercial fertilizer was redelegated to the Administrator of the Production and Marketing Administration by Secretary's Memorandum No. 1270, dated September 15, 1950. The Secretary's authority to make recommendations for issuance of necessity certificates with respect to amortization of emergency facilities for tax purposes, under section 124A of the Internal Revenue Code, also was exercised by the Production and Marketing Administration.

Claimancy Operations

The Department's operations with respect to nonfood materials and facilities needed by the agricultural economy were carried on throughout the fiscal year within the framework of a definite, though erratic, improvement in the supply and availability of steel, copper, aluminum, and other industrial materials. By the close of the fiscal year this improvement was sufficient to permit the termination of the controlled materials plan (CMP) after a period of almost 2 years during which supplies of steel, copper, and aluminum were under total allocation to all consuming segments of the economy.

Starting July 1, 1953, the Defense Materials System (DMS) becomes the Government's primary mechanism for assuring adequate supplies of basic materials to the Nation's defense effort. With the exception of stainless steel, which continues under allocation to all users at least during the first 3 months of the coming fiscal year, the DMS program provides for direct allocation of controlled materials only to assure the production and construction programs of the Department of Defense and the Atomic Energy Commission.

The Office of Defense Mobilization (ODM), in November 1952, outlined agency responsibilities in completing and maintaining the mobilization base and called upon all departments and agencies of the Government to undertake a reevaluation of the Nation's productive capacity and to formulate programs for eliminating deficiencies. Early in the fiscal year PMA had started compiling basic data on the supply and use of nonfood materials in such form as to be available for use in the event of a sudden future emergency, and, within the framework of its assigned responsibilities, began developing plans and related background information to carry out the Department's responsibilities in connection with nonfood materials and facilities in the event of all-out war.

As a part of the overall mobilization readiness study sponsored by ODM, PMA was called upon to make a study of how the gross national product (GNP), estimated to be achievable during each of the first 3 years of a hypothetical full mobilization period, would be allocated among all claimant segments of the economy. Each claimant agency was requested to determine, within its assigned share of the GNP, the most effective mobilization program for the assumed emergency period. The Department of Agriculture is responsible for breaking down this overall allocation among various categories of onfarm, food processing, and food distribution construction, determining the quantities of steel, copper, and aluminum required to support the level and pattern of construction determined to be achievable within the GNP allocation and its effect on food and fiber production.

PMA likewise cooperated with National Production Authority (NPA) industry divisions in developing mobilization estimates for farm machinery, fertilizer, pesticides, miscellaneous farm supplies, food-processing machinery, containers and other nonfood materials, facilities, equipment, and supplies of direct interest to the agricultural economy. This mobilization study was completed in May and present plans of ODM call for a reevaluation of the Nation's production potential during the coming fiscal year. In addition, PMA participated with NPA in the development of standby control orders and proce-

dures which are likely to become necessary in the event of full mobilization.

Agricultural Construction

During the early part of the fiscal year, agricultural construction was influenced by the shortages resulting from the 1952 steel strike. To spread the impact of lost steel production, DPA reduced materials allotments to the Department of Agriculture and other nonmilitary claimants for October, November, and December 1952, and for the first quarter of the calendar year 1953. As a result, PMA had to limit allotments of steel almost exclusively to nondeferrable projects which were of primary importance to the agricultural economy. This meant that many desirable agricultural construction projects had to be rescheduled beyond the time when the applicants wished to begin construction.

The steel supply situation had improved sufficiently by early spring that it was possible to approve virtually every desirable agricultural project for which applications were received. Moreover, DPA in May 1953 increased the amounts of steel, copper, and aluminum which could be obtained for construction through self-certification procedures. This relaxation of construction controls virtually eliminated applications for onfarm construction. Under the Defense Materials System which was scheduled to go into operation July 1, 1953, the Department of Agriculture will continue to have responsibility for acting on construction applications which require stainless steel.

During the period in which CMP was in effect, the Department granted allotments of over 185,000 tons of carbon steel and related quantities of other controlled materials for food processing, wholesale food distribution, and onfarm construction. Over the same period the Department acted on more than 2,000 applications involving food and fiber and related construction projects costing over \$500,000,000.

Farm Machinery and Supplies

No general shortages of farm machinery occurred during the fiscal year 1953 although the industry's output was interrupted by the work stoppages in the steel industry, in the plants of farm machinery producers, and in plants manufacturing component parts.

For the year as a whole, wheel tractor production, in numbers, was about 25 percent lower than the output in the 1951 calendar year, the principal decline being in units under 35-belt horsepower.

The output of farm machinery and equipment, other than tractors, also declined from the previous year, although the decrease in production was not nearly as great as for wheel tractors.

Production of crawler tractors during the 1953 fiscal year was very low at the outset but improved steadily during the last 6 months, when a record output probably was attained. Total production of crawler tractors (both for military and civilian use) during this fiscal year may be the largest on record. As production increased, applications for priority assistance in obtaining crawler tractors, under the NPA-PMA working agreement established during the 1952 fiscal year, continued to decline throughout the 1953 fiscal year. With the

termination of CMP, the procedure for obtaining priorities assistance was discontinued at the close of this fiscal year. During the period when priorities assistance was in effect PMA assisted about 3,000 farmers and custom operators in obtaining crawler tractors, mainly the larger models.

The amount of aluminum consumed in production of sprinkler irrigation equipment during the 1953 fiscal year was nearly double the amount used during the same period in 1952. The strong need for irrigation equipment induced defense control agencies to increase CMP aluminum allocations substantially.

Although production of steel wire products was held at high levels throughout the fiscal year, it was necessary for PMA to arrange for extra shipments of barbed wire, field fence, fence posts, nails, and staples to areas affected by statewide stock laws, through the cooperation of NPA and manufacturers.

At the request of PMA, NPA continued directives for production of cotton bale ties throughout the calendar year 1952. Special assistance also was given the entire industry in procuring steel to produce ties during the last half of the fiscal year 1953.

Fertilizer

The supply of commercial fertilizer materials in the fiscal year 1953 comprised approximately 23,700,000 tons and contained an estimated 1,804,000 tons of nitrogen (N), 2,414,000 tons of available phosphoric oxide (P_2O_5) and 1,739,000 tons of potash (K_2O), and aggregated 5,815,000 tons of primary plant nutrients. This quantity reflected a progressive increase over the supply of previous years and was approximately 4 times the average annual usage in the years 1935-39.

For the guidance of officials in agencies of USDA and for State institutions, including the land-grant colleges, and for farmers generally, PMA issued in September 1952, the 10th in a series of annual fertilizer situation reports covering the estimated supply for the fiscal year 1953. A supplemental report was issued in February 1953. The data in these reports are presented in terms of major components.

Basic information and assistance were given to representatives of industry with respect to projects in the several fertilizer expansion programs and considerable spot assistance was given to the fertilizer industry by PMA during the year in connection with procurement of controlled materials including steel for ammonia storage tanks, in the solution of transportation problems, and in arranging for improved supplies of raw materials in several instances.

Containers and Packaging Materials

The reduced supply of steel for food cans at the start of the fiscal year necessitated Government action requiring can manufacturers to give preference to orders for the perishable food pack. In addition, voluntary preference was given at all levels of industry to assure maximum protection to the perishable food packs already under way.

Shortages of steel for production of milk shipping cans made it necessary for PMA to obtain NPA directives for steel for milk can manufacturers early in the calendar year 1953.

Pesticides

Supplies of most pesticides were generally plentiful at the beginning of the 1952 growing season and production was at a high level. As a result of a prolonged drought over part of the country, which reduced populations of a number of major pests, large stocks of many pesticidal products accumulated by the end of the 1952 crop year.

Although few shortages of pesticides occurred during the fiscal year, difficulty was encountered in obtaining ryania or cryolite for the severe infestation of the sugarcane borer in Louisiana in the spring of 1953. Ryania is the preferred material but the supply of cured material in the United States during the fiscal year was only about one-third of requirements. However, as a result of action taken by PMA, the two largest cryolite producers shipped increased quantities of the insecticide grade to Louisiana.

The annual pesticide surveys conducted through State and insular PMA committees in 1951 and 1952 contributed much valuable information on the domestic production of pesticidal chemicals for the years 1950 through 1952. Based on these surveys, and other information, an extensive report, *The Pesticide Situation for 1952-53*, was published. This publication provides a summary on estimated requirements and probable supplies of more than 60 chemicals used to control pests. In addition, several summaries were prepared and published to show the trends in agricultural requirements and consumption of pesticides by regions and for the United States as a whole.

Section 302 Loans and Tax Amortization

Section 302 Loans (Public Law 774, as Amended)

Section 302 of the Defense Production Act of 1950, as amended, authorizes direct Government loans for purposes essential to the national defense and if the funds requested are not otherwise available on reasonable terms. Under Executive Order 10281, the Reconstruction Finance Corporation is responsible for all financial aspects of section 302 loans, including the amount, terms, and conditions of such loans. Pursuant to this order, loans for expansion of capacity, with respect to food and food facilities, except in the case of working capital loans (involving no more than minor expansion of capacity, which is incidental to a loan for working capital) shall be made only upon certification of essentiality of the loan by the Secretary of Agriculture.

Applications were received involving loans of \$21,466,210. Of these, only 1 application, for \$60,000, was certified; 53 applications were denied; 18 were transferred or withdrawn; and 1 was pending at the end of the year.

Tax Amortization

Section 124A of the Internal Revenue Code provides for accelerated depreciation of facilities, the construction, reconstruction, erection, installation, or acquisition of which was completed after December 31, 1949, and which are certified as essential to the national defense.

By Executive Order 10200, the Administrator of Defense Production Administration was made the certifying authority for the pur-

pose of, and within the meaning of, section 124A. DPA Delegation 1 authorizes the Department to make recommendations for the issuance of necessity certificates with respect to food and food facilities and the domestic distribution of farm equipment and commercial fertilizer.

This delegation was continued by Executive Order 10433 issued February 4, 1953, which transferred the certifying authority in connection with tax amortization and the other functions of the Defense Production Administration to the Office of Defense Mobilization.

Of the applications acted upon during the year, 27, involving \$6,437,000, were recommended for approval; 57, involving \$22,396,000, were recommended for denial; 5 were transferred or withdrawn; and 2 were pending at the end of the year.

Barter and Stockpiling

Barter

Seven transactions were executed during the fiscal year under section 4 (h) and section 5 (f) of the Commodity Credit Corporation Charter Act involving the exchange of wheat, corn, and tobacco for strategic and other materials produced abroad. Full market prices as determined by CCC were obtained and the total exchange value involved during the fiscal year was \$14,322,440. During the period from the inception of the barter program to June 30, 1953, the total value of products exchanged under this plan was approximately \$73,621,570.

Stockpiling

PMA represented the Department of Agriculture on the Interdepartmental Stockpile Committee which considered 184 problems affecting implementation of the Stockpile Act during the fiscal year.

AGRICULTURAL MANPOWER

Maintenance of an adequate force of trained and experienced year-round farm workers and skilled seasonal help was a major agricultural problem caused, primarily, by continuing opportunities for non-farm employment and the replacement needs for servicemen entering upon their years of military service as required by the Selective Service Act.

Although shortages of agricultural workers were partially offset by continuing advances in farm technology, including expansion in the use of mechanical equipment, problems on individual farms continued to arise. The more difficult occurred on family type farms which depend primarily on the physical and managerial ability and technical know-how of one or two male members of the family. The possibility of recruiting qualified replacements for such jobs is extremely limited.

Basic objectives of PMA's manpower activities were: Continuing emphasis on the essentiality of agriculture and food activities and the importance of full consideration of agricultural manpower needs in all activities affecting availability of manpower; more effective selective service classification of farm registrants; increased emphasis on recruitment of year-round workers and replacements for those subject to military service; and encouragement of farm veterans to consider return to agricultural work.

Major attention was given to providing more effective assistance to local boards in the selective service classification of farm registrants. In addition to keeping Selective Service advised of anticipated levels of production and manpower implications, the State Agricultural Mobilization Committees were encouraged to work with State selective service directors in developing methods adaptable to local conditions for determining the need of registrants' services in farming operations. Forty-two States have developed and are now using such methods. In most States arrangements were made for providing production information to Selective Service and registrants for use in classification considerations.

Closely allied with selective service activities was the assistance rendered the Adjutant General's office in the handling of requests from servicemen for discharge. Recommendations regarding the request for discharge of soldiers whose services in agriculture were contributing to the national health, safety, or interest were made on the basis of production information furnished by appropriate County Agricultural Mobilization Committees. On request, production information for use in cases involving discharge or furlough was also provided to servicemen, their employers, and selective service.

The Employment Service of the Department of Labor, which is responsible for recruitment of agricultural as well as industrial labor, was encouraged to strengthen its activities for recruitment of qualified year-round workers suitable for replacements of farm registrants. This became one of the four major phases of Employment Service program emphasis for 1953.

During the year a considerable number of servicemen were discharged from the Armed Forces upon completion of the required 24 months of training and service. Among this group were men who came from the farm or who had had considerable farm experience. This group is becoming an increasingly important potential source of year-round workers. Arrangements were made with the Bureau of Agricultural Economics and the Bureau of the Census to obtain data indicating the percentage of servicemen returning to farm jobs. Assistance was given to the Employment Service in the development of materials and procedures for use by Employment Service offices in encouraging these servicemen to consider such employment. Copies of these materials were also furnished to State PMA Committees.

Information on production levels, planting acreages, estimated yields, and man-hour requirements was currently provided to the Employment Service and its affiliated State employment services for use in the development and conduct of recruitment programs. PMA participated in planning meetings of the Federal and State Employment Services and assisted in the preparation of the 1953 farm labor recruitment kit. Production and other agricultural data were made available for use in the preparation of fact sheets, recruitment materials, and other information prepared for adaptation to State and local situations by Employment Service offices.

State and county agricultural agencies and employers and employer groups were encouraged to cooperate closely with the Employment Service offices in agricultural manpower programing. This included the making of preseason estimates of labor needs; early placing of orders for workers; improving working conditions, including hous-

ing, providing more continuity of employment; and making other efforts that enable farm employers to attract and hold qualified workers.

With the importation of more than 200,000 foreign contract workers to meet farm employer needs, the supply of seasonal workers was generally adequate in most areas. During the year, PMA participated in analyses of the relationship of programs for immigration and contracting of foreign workers to the agriculture manpower situation.

Agriculture is still confronted with a paradox—the existence of manpower shortages in some areas and “statistical” underemployment in other areas and seasons. Through joint studies of the Departments of Agriculture and Labor efforts were made to determine the extent to which these potential sources could be tapped. The limited data available tend to refute the assumed general availability of these persons for out-of-area employment. Efforts to improve utilization of farm manpower were made also through emphasis on items such as farm safety, more continuity of employment, and development of more adequate information on manpower requirements. Progress was reported in practically all States in promoting more complete and more efficient use of the farm work force through continued emphasis on those aspects of regular agricultural programs which bear on this subject.

PMA cooperated in a continuing review of the list of essential activities of the Department of Commerce. Agriculture, agricultural services, and food processing were retained on this list. Also, in view of persistent shortages of year-round workers, farm operators and assistants and other important agricultural occupations were continued on the Critical Occupations List of the Department of Labor. These lists serve as a guide to the Selective Service System and the Department of Defense in their manpower procurement programs.

PRICE STATISTICS

PMA continued the development of legal minimum prices for agricultural commodities. These legal minimum prices are the levels below which ceiling prices on agricultural commodities could not be established by the Office of Price Stabilization. The Defense Production Act of 1950, as amended, made the Secretary of Agriculture responsible for determination of such minimums. PMA developed the prices in cooperation with other Department agencies, including the Bureau of Agricultural Economics and the Office of the Solicitor. These United States average legal minimum prices were published monthly by BAE in Agricultural Prices through February 1953.

The Department continued to furnish the Office of Price Stabilization with adjustments in United States average legal minimum prices, where appropriate, for grade, season, and location as required by the Defense Production Act and as needed. Adjustments were furnished for some new commodities, and in certain instances, previous determinations were revised, mainly on the basis of more complete information.

Market prices, supplies, and other factors affecting the marketing of agricultural commodities were kept under review and OPS was informed when it appeared that price controls were no longer necessary.

On February 6, 1953, following advice from the Secretary of Agriculture, the President removed price controls and compulsory grading of meat. On March 17, 1953, pursuant to the President's direction, all sales of all commodities were exempted from price control and the Department's work in connection with the determination of legal minimum prices was discontinued.

Three publications relating to prices were prepared during the year. These were: A Price Support Handbook to help answer many of the day-to-day questions that arise about the price-support programs conducted by the Commodity Credit Corporation of the Department of Agriculture; a CCC Price Support Statistical Handbook containing a series of tables relating to levels and methods of support used for various commodities since 1933, as well as a summary of the legal authorities under which CCC price-support programs were undertaken; and a Section 32 Handbook which answers many questions about the Department's operations under section 32 of the act of August 24, 1935.

COMPLIANCE AND INVESTIGATION

PMA acted during the year to prevent and uncover criminal and civil frauds; violation of regulations; noncompliance with laws, orders, and regulations; and other irregularities that tended to impair the integrity and weaken the effectiveness of PMA and CCC programs and operations.

Investigations and some compliance surveys were conducted under the various programs carried on by PMA and CCC. In addition, accounting systems were installed and periodic audits were made of the books and records of milk market administrators, control committees, and others, where such action was authorized or required. Assistance was given to the Office of the Solicitor of the Department of Agriculture, the Department of Justice, and various United States attorneys throughout the country in the preparation and prosecution of court cases.

A total of 1,337 investigations were conducted during the year. On the basis of PMA reports, 135 criminal indictments or informations were returned or filed. Civil suits instituted numbered 170, and 83 actions were adjudicated in favor of the Government. In addition, 714 other cases were being processed at the end of the year by the Department Solicitor, regional attorneys, the Department of Justice, and United States attorneys for possible civil and criminal action.

Fines imposed in criminal cases disposed of during the year totaled \$151,100, jail sentences meted out totaled more than 75 years, suspended jail sentences totaled 43 years, and probationary time imposed was 113 years.

Recoveries of money fraudulently or improperly obtained from the Government totaled \$1,738,578. Savings—claims made against the Government but not paid—amounted to \$240,442. Collections of delinquent loans, liquidated damages, and penalties amounted to \$2,870,190. The grand total of fines, recoveries, savings, and collections was \$5,000,310.

Some of the more serious or recurring types of offenses involved the submission of false claims against the Government; false and

fraudulent statements; conspiracy to defraud; forging or altering official documents; theft or conversion of commodities owned by or pledged to the Government; embezzlement of Government moneys; ineligibility of various commodities for price support; breach of Government contracts; negligence of warehousemen and carriers resulting in the damage or destruction of Government-owned commodities by fire, water, or deterioration; false applications by ACP vendors for payment for materials not actually delivered and substitution of other materials for those required to be delivered under ACP; and false identification of cotton, tobacco, and peanuts to avoid payment of marketing penalties.

Many of the grain conversion cases involving commercial warehousemen (mentioned in the 1952 report) were tried and disposed of in Federal courts during this fiscal year. Sizable fines and prison terms were imposed in many cases. For example, in one case the defendant received a prison sentence of 4 years and was fined \$10,000. In another case the prison term was 5 years plus a fine of \$15,000. On the civil side of the courts a number of suits against warehousemen were concluded in favor of the Government and large sums of money were collected in satisfaction of CCC's claims. Many more were pending trial and disposition at the end of the fiscal year.

Considerable interest was manifested in a group of cases investigated during the year which disclosed possible fraud and false claims against the Government under the International Wheat Agreement. Importation of Canadian-grown wheat into the United States is limited to 795,000 bushels annually and is subject to a duty of 21 cents per bushel. Wheat classified as "unfit for human consumption" is permitted to enter the United States without restriction at a preferential rate of duty and is intended primarily to meet livestock-feed requirements. Millions of bushels of this "unfit" wheat were imported into the United States during the years 1951-53. Substantial quantities of it were blended with United States grown wheat and milled for human consumption both in this country and abroad. Investigation disclosed that in many instances subsidy claims covering exports under the IWA program of this ineligible wheat (or flour milled therefrom) were presented to and paid by the Government. Already over \$400,000 thus improperly claimed has been recovered from exporters and it is anticipated that additional potential recoveries will be correspondingly large. The investigations will continue.

Public hearings on "unfit" wheat were held by the Senate Committee on Agriculture and Forestry. In June 1953 a Senate bill was introduced to prohibit the blending of wheat imported as "unfit for human consumption" with wheat suitable for human consumption. The Senate committee has scheduled additional hearings for later in the year.

AUDIT ACTIVITIES

PMA continued its intensive internal audit program under which recommendations were made for the improvement of fiscal and operating policies and procedures.

A total of 2,045 audit reports covering all phases of PMA-CCC operations were made during the year. Of these 152 reports covered operations of PMA commodity offices and contained 442 recommenda-

tions, and 316 covered PMA State and county offices and contained 1,958 recommendations.

Other audits were made as follows:

Schools under the national school lunch program, 849; State educational agencies, 194; State distributing agencies that distribute section 6 and section 32 commodities, 101; area and insular offices, 10; distributing agencies that distribute section 32 commodities only, 12; agreements under the Agricultural Marketing Act of 1946 (RMA, title II), 7; inspection and grading offices, 56; terminal market offices, 11; cooperative agreements with State departments of agriculture, covering inspection of fresh fruits and vegetables, 9; warehouses under storage guarantee agreements, 68; tobacco cooperative associations, 15; peanut cooperative associations, 3; reconciliations of CCC capital and administrative funds, 176; other, 66. These reports also contained a large number of recommendations.

At the request of the Secretary of Agriculture, the PMA Office of Audit performed a special audit of CCC as of January 31, 1953, for the purpose of determining whether the Statement of Financial Condition fairly presented its assets and liabilities as of that date. By agreement with the Comptroller General of the United States, the Division of Audits, GAO, participated in the planning of this audit and reviewed the working papers after the work was completed. As a result of this audit, the Chief Auditor rendered an opinion to the effect that the published statement of the Corporation as of January 31, 1953, fairly presented its assets and liabilities as of that date, subject to certain comments which were not sufficiently material to justify changing that statement.